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TUGAS AKHIR TERAPAN - RC145501

PERBANDINGAN WAKTU DAN BIAYA PEKERJAAN STRUKTUR ANTARA RAB HSPK 2015 SURABAYA DAN RAB KONTRAKTOR PADA PEMBANGUNAN GEDUNG BPKAD JAWA TIMUR

NOVIA DAMAYANTI
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Dosen Pembimbing
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PROGRAM STUDI DIPLOMA III TEKNIK SIPIL
Fakultas Teknik Sipil dan Perencanaan
Institut Teknologi Sepuluh Nopember

2016



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TUGAS AKHIR TERAPAN - RC145501

RATIO OF TIME AND COST BETWEEN HSPK 2015 SURABAYA AND ENGINEER ESTIMATE IN THE STRUCTURE CONSTRUCTION OF BPKAD BUILDING EAST JAVA PROVINCE

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Lecture's Name
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Institut Teknologi Sepuluh Nopember

2016

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**“ PERBANDINGAN WAKTU DAN BIAYA
PEKERJAAN STRUKTUR ANTARA RAB HSPK 2015
SURABAYA DAN RAB KONTRAKTOR PADA
PEMBANGUNAN GEDUNG BPKAD JAWA TIMUR ”**

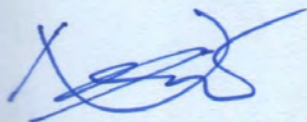
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**Diajukan Untuk Memenuhi Salah Satu Syarat
Memperoleh Gelar Ahli Madya
pada**

**Program Studi Diploma III Teknik Sipil
Fakultas Teknik Sipil dan Perencanaan
Institut Teknologi Sepuluh Nopember**

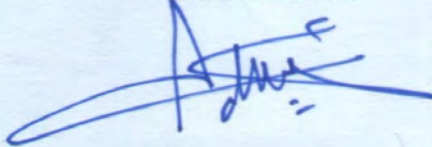
Surabaya, Juni 2016

MAHASISWA I



NOVIA DAMAYANTI
NRP. 3113 030 104

MAHASISWA II



IWAN ADI ROLIONO
NRP. 3113 030 138



Mengotahui,

Dosen Pembimbing

Ir. Ach. Yusuf Zuhdy, PG, Dipl. Plg. MRE
NIP. 19610608 198601 1 001

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Nama : NOVIA DAMAYANTI / IWAN ADI ROLIONO
Nrp. : 3113 030 104 / 3113 030 138
Jurusan / Fak. : DIII TEKNIK SIPIL / FAKULTAS TEKNIK SIPIL DAN PERENCANAAN
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b. Telp/HP : 087852493629 / 087858105719

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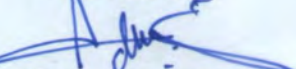
Pada tanggal :

Yang menyatakan,
MAHASISWA I


NOVIA DAMAYANTI

Nrp. 3113 030 104

MAHASISWA II


IWAN ADI ROLIONO

3113 030 138



KETERANGAN :

Tanda tangan pembimbing wajib dibubuhi stempel jurusan.

Form dicetak dan diserahkan di bagian Pengadaan saat mengumpulkan hard copy TA/Tesis/Disertasi.

RGTD C P F P I C P 'Y C M V W F C P 'D K [C 'R G M G T L C C P "
U V T W M V W T 'C P V C T C 'T C D 'J U R M 4 2 3 7 'U W T C D C [C 'F C P "
T C D 'M Q P V T C M V Q T 'R C F C 'R G O D C P I W P C P 'I G F W P I "
D R M C F 'L C Y C 'V K O W T

P c o c 'O c j c u k y c 'K' <P q x k 'F c o c { c p v k'
P T R" " " <5335'252'326"
P c o c 'O c j c u k y c 'K' <K' c p 'C f k T q k p q "
P T R" " " <5335'252'35: "
F q u g p 'R g o d l o d l p i "" <K 0 C 0 [w u w h \ w j f { . 'R I (F k r n 'R i 0 T G "
P K R" " " "" <3; 83282: '3; : 823'3'223"
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CDUVT CM'

I g f w p i " D R M C F " R t q x l p u k ' L c y c " V l o w t " o g t w c n e p "
d e p i w p c p " n e p v q t " 7 " n e p v k " f g p i c p " n e u " d e p i w p c p " Ö 2 5 4 " o 4 0 '
R g o d e p i w p c p " o g o g t w n e p " r g t g p e c p c e p " d l c { c " f c p " y c m w " { c p i "
g h k u l g p 0 ' I g f w p i " D R M C F " * D e f c p " R g p i g n r c " M g w e p i c p " f c p " C u g v "
F c g t c j + " o g o k r n k ' h w p i u k ' d e p i w p c p " u g d c i c k ' i g f w p i " r g t n e p v q t c p 0 '
R g t j k w p i c p " r g t g p e c p c e p " l e f y c n ' r g r n u c p c e p " r g n g t l c c p " u t w n w t "
f k k p l c w " f c t k ' u g i k ' y c m w " f c p " d l c { c " r g n g t l c c p " f g p i c p " u w o d g t "
t g h g t g p u k ' d g t w c " d w n w ' f c p " r g p i c n o c p " n u p t c m q t 0 '

C p e r k u c " d l c { c " f c p " y c m w " r g n g t l c c p " f k r n w n e p " f g p i c p "
o g p i j k w p i " x q n w o g " r g n g t l c c p " u t w n w t " f c p " o g o c j c o k ' i c o d e t "
d e p i w p c p " w p w n i ' o g p g p w n e p " o g v q f g " r g r n u c p c e p " r g n g t l c c p " f c p "
o g p i j k w p i " r t q f w n k x k c u " u w o d g t " f c { c " * c r v " o c v g t k e n ' f c p "
r g n g t l c + U g j k p i i c . " f k r g t q r g j " f w t c u k ' f c p " l e f y c n ' r g r n u c p c e p "
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F c t k ' r g t j k w p i c p " d l c { c " f c p " y c m w " { c p i " v g r j " f k r n w n e p . "
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r g n g t l c c p " u g p k r k ' T r " 3 5 8 ; 3 0 4 3 0 2 2 2 . / 0 ' R g p { c l k c p " r g p l c f y c n e p "
r g n g t l c c p " r g o d e p i w p c p ' I g f w p i " D R M C F " R t q x l p u k ' L c y c " V l o w t ' k p k '
o g p i i w p e n e p " m t x c " - U 0 ' r g n g t l c c p " f c p " p g y q t n i ' r n p p l p i " d g t w c "
F k e i t c o ' C Q C " * C e k x k \ ' Q p ' C t t q y + 0 '

M e w ' h w p e k < d l c { c ' r g n g t l c c p . ' y c m w ' r g n g t l c c p . ' r g p l c f y c n e p 0 '

**RATIO OF TIME AND COST FOR STRUCTURE OF
BPKAD BUILDING EAST JAVA PROVINCE WITH HSPK
2015 SURABAYA AND ENGINEER ESTIMATE**

"

Uwf gpwāP co g'K'	<P qxk'F co c{ cpw'
P TR" " "	<5335'252'326"
Uwf gpwāP co g'KK'	<K cp'Cf kT qkqpq"
P TR" " "	<5335'252'35: "
Ngewt gt " "	<K0C0[wuwl\ wj f { .F k r n Rn . 'O T G"
P KR" " "	<3; 83282: '3; : 823'3'223"
"	

CDUVTCEV"

*DRMCF" Dwkf kpi " *O qpgxt{ " cpf " Tgi kqpcn' Cuigv'
Qti cpk/cvkqp+Rt qxlpeg'Gcuw/Lcxc'cu'cp'qlhkg'dwkf kpi 'j cu'7'hqqtu"
y kj "wpcn'ctgc"dwkf kpi ""cu"06254"o "4"0Vj g"eqpwt wevkqp"qlh'j ku"
rtqlgev'pggf u"vj g'r rppkpi "eqw"cpf "ko g"qlh'ghkkgpwt "dcugf "qp"
t glgt gpeg'dqqu"cpf "eqpwt cevqt au'gzr gt kpeg0'*

*"Eqw"cpf "ko g'qlh'y qtmrt gupvgf "d{ "ecrewwvki "xqno g'qlh'
qtm' cpf " dwkf kpi " uq qr/f tcy kpi " wj f gekf g" y qtm' o gvj qf u" cpf "
ecrewwv'rt qf wevckx{ "qlh' guqwt egu"o cp. "o cvgt kn'cpf "vqnm0"*

*Cu'j g't guw: 'j g'ko g'qlh'y qtmku'362'f c{ uOCpf 'j g'eqw'qlh'
y qtm' ku" Tr" 3508; 30443022./0' DRMCF" Dwkf kpi au' uej gf wtkpi "
rrtqlgev'rt gupvgf "" d{ " -Lb' Ewt xg" qlh' Y qtm' cpf " QQC" f k i t co "
Cevckx{ 'Qp' Ctt qy 'F k i t co +cu'pgy qtmr rppkpi 0'

Keywords : cost of work, time of work, schedule"

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MCVC'RGPI CPVCT"

Rwlk'u{ wmw "ngj cf kcv'Cmj "UY V."cvu'iko r ej cp"Tej o cv"
f cp" Mctwplc/P {c." ugj lpi i c" r gp{ wuwp" f cr cv" o gp{ grgucknep"
Ner qtcp"Vwi cu"Cnj k" {cpi "dgtlwf wli'ö "Rgt dcpf lpi cp"Y cmw'f cp"
Dk{c "Rngt lccp"Ut wmw "cpwt c"TC'D'J URM'4237"Uwtcdc{c "f cp"
TC'D'Mqpwcmqt 'r cf c'Rgo dcpj wpcp'I gf wpi 'DRMCF'Lcy c"Vko wt"
ö"l'p'k'f gpi cp"r'pect'f cp"f crco "ngcf ccp"ugj cv'y cr'chkc'0'

Ner qtcp"Vwi cu"Cnj k"l'p'k'f kclwncp"wpwni'o go gpwj k'ucrcj "
ucw'u{ctcv'O go r gtqrgj "I grct"Cj rk'O cf {c"r cf c"Rtqi tco "Uwf k'
F kr njo c"KKVgnpknUkr kiHmwncu'VgnpknUkr klf cp'Rgtgpecpccp'f k'
Kpukw'Vgnpqmji k'Ugr wnj "P qr go dgt'0'

Ner qtcp"Vwi cu"Cnj k"l'p'k'dgtkuk'r gtgpecpccp"y cmw'f cp"
dk{c "r nggtlccp"ut wmw "r go dcpj wpcp"i gf wpi "DRMCF"Rtqxkpu'
Lcy c"Vko wt="f crco "r tqr qucr' l'p'k' lwi c" cnep" f kdcj cu" o gpi gpck'
o gvwf qmji k" {cpi "f ki wpcncp"wpwni'r gtgpecpccp"y cmw'f cp"dk{c "
r nggtlccp'0'

Rgp{ wuwp"o gpi wecr nep"vgtko c'haukj "ngr cf c"<"

30 Qtcpi "Vwc" nco k" Klw'f cp" Dcr cm" {cpi "ugpcp'kcuc"
o gpf qcncp"ngugj cvcp'f cp"ngrepectcp'uwf k'hco k"

40 KOC'0' wuw\ wj f {."RI OF kr nRi 0O TG."ugrcmw'f qugp"
r go dko dkpi "Vwi cu'cnj k"

50 Vgo cp/vgo cp" mwkcj." {cpi " wtw" o go dgtkncp"
ugo cpi cv'0'

Ugo qi c"Ncr qtcp"Vwi cu"Cnj k"l'p'k'dgto cphccv'dci k'r etc"
r go dcec'0' Rgp{ wuwp" o gp{cfctk' cf cp{c" ngmwtepi cp" f crco "
r gp{ wuwp" Ncr qtcp"Vwi cu"Cnj k"l'p'k'Qngj "net gpc'kw."Rgp{ wuwp"
dgtugf kc"o gpgtko c"ntkknlf cp"uctcp"f go kr gtdecncp"f cp"ngo clwep"
Ncr qtcp"Vwi cu"Cnj k"l'p'k'0'

"

Uwtcdc{c."Lxp'k'4238"

Rgp{ wuwp"

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F CHVCT'VCDGN"

Vedgn'403'Ghukgucp'Qr gtcukqpcn'Cncvf cp'Rgo grkj cteccp 22
Vedgn'404'MxcrkhnrcukMvgtco r krp'Qr gtcvqt 22
Vedgn'405'Mqpf kukEwcec 23
Vedgn'503'Lcf y cnlMgi kcvcp'Regp{vwupcp'Vwi cu'Cnj k'i Œ í Ő5: "
Vedgn'603'Tgner kwrcukXqmw g'Rngntlccp'Utwmwt'i í í í Ő5: "
Vedgn'604'P krkJ URM'4237'Uwtcdc{c}/Rngntlccp'Rgo dgtuj cp"
Ncr cpi cp'(.....)Ŧ8"
Vedgn'605'P krkJ URM'4237'Uwtcdc{c}/Rgo dwecvp"
Dgy r rcprnlVkln(.....)Ŧ9"
Vedgn'606'P krkJ URM'4237'Uwtcdc{c}ó'Rgo dwecvp'Rei ct"
Ugo gpvtc'Ugpi 'I grqo dcpi 'vkpi i k'4'o '(.....)Ŧ5: "
Vedgn'607'P krkJ URM'4237'Uwtcdc{c}/Rgo dwecvp'F ktgrnkMggv
(.....)Ŧ3"
Vedgn'608'P krkJ URM'4237'Uwtcdc{c}/Rgpi i crkcp'vcpj 'f gpi cp"
crv'dgtcv(.....)Ŧ75"
Vedgn'609'P krkJ URM'4237'Uwtcdc{c}/Rgpi wti cp'Reuk '*r cf cv+
(.....)Ŧ6"
Vedgn'60: 'P krkJ URM'4237'Uwtcdc{c}/Rgpi wti cp'Vecej "
Mgo dcrk(.....)Ŧ77"
Vedgn'60; 'P krkJ URM'4237'Uwtcdc{c}/Rgpi wti cp'Ukw'*r cf cv+
(.....)Ŧ78"
Vedgn'6032'P krkJ URM'4237'Uwtcdc{c}/Rgpi cpi ncwp'vcpj "
ngrwct'r tq{ gn(.....)Ŧ7: "
Vedgn'6033'F wtck'Rgo cpeapi cp'f crto '3'i twr '(.....)Ŧ85"
Vedgn'6034'F wtck'r go cpeapi cp'cpvt'i twr '"/3(.....)Ŧ87"
Vedgn'6035'F wtck'r go cpeapi cp'cpvt'hqo wpcn(.....)Ŧ88"
Vedgn'6036'P krkJ URM'4237'Uwtcdc{c}/Rngntlccp'Reuci cp"
Dcw'Mcrk(.....)Ŧ8: "
Vedgn'6037'P krkJ URM'4237'Uwtcdc{c}/Rgo dwecvp'Nwdcpi "
Uquw'lRkg(.....)Ŧ93"
Vedgn'6038'P krkJ URM'4237'Uwtcdc{c}/Rngntlccp'Dgvqp"
*3re4r u5nt+(.....)Ŧ94"

FACTVCT'I CO DCT"

FCHVCT'DCI CP"

[illegible]

FCHVCT'I TCHKM'

I tchkn703'Dlc{c'r gngtlccp' r go cpecpi cp()435"
I tchkn704'Dlc{c'r gngtlccp'wt wi'ukt w'dcy cj'rcpwk'ygcdn64'eo
()436"
I tchkn705'Dlc{c'r gngtlccp' r go dgukcp' r qgt()437"
I tchkn706'Dlc{c'Rgngtlccp'Dgnrknp'i'Rqgt()438"
I tchkn707'Dlc{c'Rgngtlccp'Rgni geqtcp'Rqgt()439"

[continued]

DCD'K' RGPFCJ WNWCP''

308 Newt'Dgrncpi''

Rgo dcpj wpcp'' I gf wpi'' DRMCf'' *Dcf cp'' Rgpi gmqn''
Mgwcpj cp''f cp''CugvF cgtcj +RtqxkpkLcy c''Vlo wt.'dgtmqnuk'f k'
Lncp''Lqj ct''pq0'3;/43''Uwtcdc{c.''f ko wrk' dwrcp''O gk'4237''
j kpi i c''F gugo dgt''42370' I gf wpi'' DRMCf'' kpk' o gtwr cncp''
dcpj wpcp''7'hpvck'f ko cpc'r cf c'hpvck'f cuct'ugdei ck'hqdd{ 'f cp''
ctgc'r ctnk0'I gf wpi''kpk'o go kknk'ncu'dcpj wpcp''Ö'6254''o 40'
I gf wpi''DRMCf''dgtmqnuk'f k'ctgc''{cpi ''dgtj ko r kcp''f gpi cp''
dcpj wpcp''ncp.''f ko cpc''ugdgrj''Vlo wt''dcpj wpcp''dgtdevcup''
f gpi cp''I gf wpi''ncp c''Mcpvqt''DRMCf''RtqxkpkLcy c''Vlo wt.''
ugdgrj''wetc'dcpj wpcp''dgtdevcup''f gpi cp''two cj''wpi i cni'
y cti c.''ugf cpi ncp''ugdgrj''ugrcvp''dcpj wpcp''dgtdevcup''
f gpi cp''ugdwcj''Lncp.'Lncp'Lqj ct''Uwtcdc{c0P kckhupvtenf{cpi ''
f kugwlvk''wpwnl''rngtllcp''utwnwt''ugpkck''Tr''
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o go gtnwncp'r gtgpecpcpp'r grncucpcpp'r nggtllcp''{cpi ''f kklpw'
f ctk'ugi k'y cmw'f cp''dlc{c''f gpi cp''o gpi i wpcncp''o cpcelgo gp''
r tq{gn0'F gpi cp''cf cp{c''o cpcelgo gp''r tq{gn'l kpk'o cnc''f cr cv'
f k'gpecpcncp''ugectc''egto cv'f cp''vgnk' nkpgtlc''r tq{gn'l {cpi ''
f kmw''f ctk'lpf knvqt''nkpgtlc''dlc{c.''y cmw'f cp''o ww0'Cf cp{c''
o cpcelgo gp'' r tq{gn'l kpk' f ko cmw'f ncp'' ci ct'' r grncucpcpp''
r nggtllcp''f khr cpi cp''igdij ''vgtctcj 'f cp''lguwck'f gpi cp''tgpecpc0'
Ci ct''j cuki'f ctk'r tqugu''o cpcelgo gp''r tq{gn'l kpk'qr ko cn''o cnc''
ucpf ct'' nkpgtlc'' r tq{gn'l ugrco c'' r tqugu'' dgtncpi uwpj'' j ctwu''
f k'gpecpcncp'' ugfgvkn' f cp'' ugcmtcv'' o wpi nkp'' wpwnl''
o go kpk' cncp''ngucrcj cp''f khr cpi cp0Qngj ''hetgpc'kw'r gpwku''
o gtgpecpcncp'' y cmw'f cp''dlc{c''f gpi cp''dgtdei ck'tghgtgpk'
{cpi ''f kugdwncp''f crco ''ngr wvncncp0'

Rgtj kwpi cp"y cmw" f cp" dlc{ c" r gngtlccp" { cpi "f kklplew" o grkr wk' r gngtlccp" utwnwt" r qpf cuk" r gngtlccp" utwnwt" ncpck" 3"j lpi i c" r gngtlccp" utwnwt" cwr "i gf wpi 0'Rgtj kwpi cp" lcf y cn' f kwlplwnep" f gpi cp" o gpi i wpcnep" Mwtxc" U" f cp" Pgy qtnl' Rrcppkpi 0' Pgy qtnl' Rrcppkpi "f ki wpcnep" wpmwl' o gpi gwcj vk' ngi kvcp" ntkku" { cpi "o go dwwj nep" r gpi cy cucp" ngcv' ci ct" r grncpccpp{ c" wfcml' vgtlcf k' ngvtrco devecp." ugtvc" wpmwl' o grncwnep" r gpi gegnep" ngo derk' lcf y cn' r tq{ gn' ci ct" cnqneuk' uwo dgt" f c{ cp{ c" o gplcf k' r gdlj "ghgmkh" f cp" ghulcp 0' O gvqf g" Pgy qtnl' Rrcppkpi " { cpi "f ki wpcnep" cf crj "Cevkkl' qp" Cttqy " *CQC-0' Ugf cpi nep." dlc{ c" r gngtlccp" o gpi i wpcnep" r gtj kwpi cp" Tgpecp" Cpi i ctc p" Dlc{ c" *TCD-0'

304'Two wucp'O cucrj "

30 Dci klo cpc" o gvqf g" r grncpccpp" r gngtlccp" utwnwt" r go depi wpcp" I gf wpi "DRMCF "Rtqxlpuk'Lcy c" Vlo wt "A"
 40 Dci klo cpc" r gtj kwpi cp" y cmw" r gngtlccp" utwnwt" r go depi wpcp" I gf wpi "DRMCF "Lcy c" Vlo wt "f gpi cp" J URM' 4237" Uwtcdc{ c" A"
 50 Dci klo cpc" r gtj kwpi cp" dlc{ c" r gngtlccp" utwnwt" r go depi wpcp" I gf wpi "DRMCF "Lcy c" Vlo wt "f gpi cp" J URM' 4237" Uwtcdc{ c" A"
 60 Dci klo cpc" r gtdepf lpi cp" y cmw" f cp" dlc{ c" r gngtlccp" utwnwt" f gpi cp" J URM' 4237" Uwtcdc{ c" f cp" TCD' Mqptcmqt" r cf c" Rgo depi wpcp" I gf wpi "DRMCF "Lcy c" Vlo wt "A"

305'Dewucp'O cucrj "

30 Rgtj kwpi cp" y cmw" r gngtlccp" r go depi wpcp" I gf wpi " DRMCF "Lcy c" Vlo wt "o grkr wk' r gngtlccp" utwnwt" dcy cj " f cp" utwnwt' cvcu0'
 40 Rgtj kwpi cp" dlc{ c" r gngtlccp" r go depi wpcp" I gf wpi " DRMCF "Lcy c" Vlo wt "o grkr wk' r gngtlccp" utwnwt" dcy cj " f cp" utwnwt' cvcu0'
 50 Rgtj kwpi cp" dlc{ c" f cp" y cmw" r gngtlccp" utwnwt" o gpi i wpcnep" J URM' 4237" Uwtcdc{ c' 0'

60 Vkf enlo gpi j kwpi 'utvwnwt'depi wpcp'i gf wpi 0'
 70 Xqno g'r gngtlccp'utvwnwt'dgtf cuctnep'cpcnk'r gtj kwpi cp"
 f cno 'TCD'Mqpvcmqt0'

"

306'Vwlcwp'Rgpwlcwp''

30 O gpi gvcj wk' o gvqf g" r grmcpcpcp" r gngtlccp" utvwnwt"
 r go depi wpcp'I gf wpi 'DRMCF 'Rtqxlpuk'Lcy c'Vko wt0'
 40 O gpi gvcj wk' y cmw" r grmcpcpcp" r gngtlccp" utvwnwt"
 r go depi wpcp'I gf wpi 'DRMCF 'Lcy c'Vko wt'f gpi cp"J URM'
 4237'Uwtdc{c0'
 50 O gpi gvcj wk' dlc{c" r gngtlccp" utvwnwt" r go depi wpcp"
 I gf wpi " DRMCF " Lcy c" Vko wt" f gpi cp" J URM' 4237"
 Uwtdc{c0'
 60 O go dcpf lpi nep" y cmw" f cp" dlc{c" r gngtlccp" utvwnwt"
 f gpi cp"J URM'4237'Uwtdc{c'f cp'TCD'Mqpvcmqt0'

"

307'O cphcev'Rgpwlcwp''

O cj cuky c" o co r w" o gpi j kwpi " y cmw" f cp" dlc{c"
 r gngtlccp'utvwnwt'uwcw'r go depi wpcp'I gf wpi 'f k'icr cpi cp0'

"

308'Uwngo c'vnc'Rgp{ wuwpcp'Ncr qt cp'Vwi cu'cnj k''

Rgp{ wuwpcp'icr qt cp'wi cu'cnj k'lpk'f kuwup'o gplcf k5'dcd0'kk'
 f ctk'ugvkr "dcd'cnep'f kwtcknep'f cno 'wtckcp'dgtknwlpk'<

Dcd'k'Rgpf cj wuwcp''

Dcd'lpk'o go dcj cu"o gpi gpck'icvet"dgrncpi ."two wucp"
 o cucnj ."dcwucp"o cucnj ."wlcwp"r gpwlcwp."o cphcev"
 r gpwlcwp'uwngo c'vnc'r gp{ wuwpcp'icr qt cp'wi cu'cnj k'."
 ugtc'kf gpvku'r tq{ gnif cp'r gvc'hqncuk'r gngtlccp"

Dcd'k'Vpdcwcp'Rwucnc''

Dcd'lpk'o go dcj cu"o gpi gpck'vgqtk'o cpcigo gp'r tq{ gm"
 r gtj kwpi cp" xqno g" r gngtlccp." o gvqf g" r grmcpcpcp"
 {cpi "f ki wpcnep." r tqf wmkxkcuc'ncv' dgtcv." r gtj kwpi cp"
 dlc{c" f cp" y cmw" r gngtlccp" dgtf cuctnep" J URM' 4237"
 Uwtdc{c."ugtvc'o gvqf qnqi k'r gplcf y cncp'r gngtlccp0'

"

Dcd"KKO gvf qm k'

Dcd" lpk' o go dej cu" wtclcp" wo wo " f cp" o gvf qm k'
r gp{ wwpcp"Vvi cu'Cnj k"

Dcd"KKOJ cukrf cp'Rgo dej cucp"

Dcd" lpk' o go dej cu" o gpi gpck' tgnr kwruk' xqwo g'
r gngtlccp." r gtj kwpi cp" y cmw' f cp" dlc{c" r gngtlccp"
utwnwt" f cp" tgnr kwruk' y cmw' f cp" dlc{c" r gngtlccp"
utwnwt"

Dcd"XORgpwwr "

Dcd" lpk' o go dej cu" r gtcpf lpi cp" y cmw' f cp" dlc{c"
r gngtlccp" utwnwt" dgtfcucncp" cpcruc" J URM" 4237"
Uwcdc{c" f cp" TCD" Mqptcmqt" f cp" Mguo r wcp"

"

30'K gpvscu'Rt q{ gnif cp'Rgw'NqneukRngtlccp"

P co c'Rtq{gnl' < Rgo dcpi wcp" I gf wpi " DRMCF ""
Rtqxlpuk'Lcy c"Vko wt"

NqneukRtq{gnl' "*****<Lcnp'Lqj ct"pq03; "ó"43"Uwcdc{c"

Mqptcmqt'Rgrncpc" < RV0' Mct{c" Dkuc" ó" I gpgcn"
Eqptcevt."Lcnetc"

F cuct'Rgtj kwpi cp" " <"

- UP K'4: 58<422: "Vvc"ectc"r gtj kwpi cp"j cti c"ucwcp"
Rngtlccp" Rqpf cuk' wpwnl' nqputwnuk' i gf wpi " f cp"
r gtwo cj cp"
- UP K'4: 57<422: "Vvc"ectc"r gtj kwpi cp"j cti c"ucwcp"
Rngtlccp" Vcpcj " wpwnl' nqputwnuk' i gf wpi " f cp"
r gtwo cj cp"
- UP K'95; 6<422: "Vvc"ectc"r gtj kwpi cp"j cti c"ucwcp"
Rngtlccp" Dgvqp" wpwnl' nqputwnuk' i gf wpi " f cp"
r gtwo cj cp"
- UP K'95; 5<422: "Vvc"ectc"r gtj kwpi cp"j cti c"ucwcp"
Rngtlccp" dguk' f cp" cno lpkwo " wpwnl' nqputwnuk'
i gf wpi " f cp"r gtwo cj cp"

Utwntw'Dcpi wcp"Dcy ej "<Rqpf cuk' lpi "r cpeepi "

Utwntw'Dcpi wcp"Ccu" <Mqputwnuk'utwnwt'icpck3"ulf "7"
f cp"cxr "

Dgtknw'lpk'r gvc'hqneuk'I gf wpi 'DRMCF 'Rtqxlpuk'Lcy c"Vko wt"
<

" Jalan Johar 19 -21
Surabaya - Jawa Timur"



I co dcl '30'Rgc'hqneuk'gngtlccp"

õJ cno cp'lpkugi elc'f kquupi ncpö"

DCD'KK'
VPLCWCP 'RWUVCMC'

"

40F' ghpkk'O cpcigo gp'Rt q{ gni'

"

O gpwtw'J (Mgt| pgt"*3; : 4+"*f crco "Uqgj ctvq.3; ; ; +"
O cpcigo gp" Rtq{gni' cf crcj " o gtgpecpcnep." o gpi qti cpkuk."
o go ko r kp."f cp"o gpi gpf crkncp"uwo dgt"f c{c'r gtwucj ccp"wpwni'
o gpecr ck" ucuctcp" lapi ne" r gpf gni' {cpi " vgrcj " f kgpwnep0'
O cpcigo gp" r tq{gni' o gpi i wpcnep" r gpf gncwcp" ukungo " f cp"
j lgtctnk"*ctwu"ngi kcvcp+"xgtvknncf cp"j qtkuqpcr0'F ctk'f ghpkuk'
f kvcu."o cpcigo gp"r tq{gni'o gpi cpf wpi "j cnj cn'r qnqm" {cnpk'
o gtgpecpcnep."o gpi qti cpkuk"o go ko r kp"fc p"o gpi gpf crkncp"
uwo dgt" f c{c" r gtwucj ccp" {cpi " dgtw c" o cpwukc." f cpc" f cp"
o cvgtkcn0'

F crco " J wugp." 422; ." ngi kcvcp" f crco " o cpcigo gp"
r tq{gni'cf crcj "ugdei ck'dgtkmw"<

30Rgt gpecpccp"

Rcf c"ngi kcvcp"kp'f krcwnep"cpvkuk'cuk'wi cu"fc p"nqpf kuk'
{cpi "cf c'f gpi cp"o gpgcr nep"ucuctcp'f cp'wlvcp" {cpi "j ctwu'
f lecr ck'ugtvc"o gpgpwnep"ngdkncp"r grncucpccp."r tqi tco "
{cpi "cnep"f krcwnep."lcf y cn'y cnw'r grncucpccp."r tqugf w"
r grncucpccp" ugectc" cf o kpkntcvkh" f cp" qr gtcukqpcni' ugtvc"
cnqneuk'cpi i ctep'dkc{c"fc p'uwo dgt"fc {c0'

40Rgpi qti cpkucukp"

Rcf c" ngi kcvcp" kp' f krcwnep" kf gpvkhncuk' f cp"
r gpi grqo r qmncp" lgpkulgpku" r gngtlccp." o gpgpwnep"
r gpf grgi cukcp'y gy gpcpi "f cp"vcp i wpi lcy cd'r gtuqpgnugtvc"
o grgvcncp" f cuct" dci k' j wdwpi cp" o cukpi /o cukpi " wpuw"
qti cpkucuk0'

"

404'Rgtj kwpi cp'Xqno g'

"

Vcj cr cp'r gtwo c" {ckw'f gpi cp'b grmwne'p'r gtj kwpi cp"
 xqno g' F ko cpc" vgrgdj " f cj wnw' o gtlpek' ugkr " kgo "
 r gngtlccp" r cf c" rtq {gn' {cpi " cnep" f lj kwpi " dguctcp"
 xqno gp {c0'F cno "Vwi cu" Cnj k "l'pk" w'pwn' dguctcp" xqno g"
 r gngtlccp" o gpi i wpcne'p" cpcrkuc" r gtj kwpi cp" xqno g"
 r gngtlccp" fctk' TCD" Mqptcmqt0' Dgtknw' l'pk' two wu"
 r gtj kwpi cp' xqno g' r gngtlccp" {cpi " f ki wpcne'p" <

"

C0Rgtj kwpi cp'Xqno g'I crkcp'vpcj "

Xqno g'i crkcp'vpcj " f lj kwpi " dgtf cuctne'p" r tlpukr "
 ncu" dlf cpi " i crkcp" *tr guko " c'wv w'p" r gtugi k'r cplepi " +"
 f knrk'f gpi cp' r cplepi 0Cr cdkr " f k'wo wunep <

Xqno g'? 'R'z'N'z'V'*o ⁵ +'

F ko cpc" <

" R" ? "Rcplepi "i crkcp" *o +"

" N" ? "Ngdct" i crkcp" *o +"

" V" ? "Vlpi i kngf cno cp" i crkcp" *o +"

D0Rgtj kwpi cp'Xqno g'Wt wi cp"

Xqno g" w'wi cp" f lj kwpi " uguwck' f gpi cp" xqno g"
 i crkcp'vpcj 0F gpi cp' ectc' b gpi crkne'p" r cplepi " . "gdct. " f cp"
 vlpi i k'w'wi cp' uguwck' r gtgpecpcp 0Cr cdkr " f k'wo wunep <

Xqno g'? 'R'z'N'z'V'*o ⁵ +'

F ko cpc" <

" R" ? "Rcplepi "w'wi cp" *o +"

" N" ? "Ngdct" w'wi cp" *o +"

" V" ? "Vlpi i k'w'wi cp" *o +"

"

E0Rgtj kwpi cp'Xqno g'Dgnukpi "

Xqno g" dgnukpi " f lj kwpi " dgtf cuctne'p" r tlpukr "
 ncu" dlf cpi 0F ko cpc" ncu'p" f k'f cr cv' f ctk' r gtne'rkcp" cp'etc"
 ngukpi " *gdct" dlf cpi " utwnw' " {cpi " r gtnw' f kdgnukpi " +f cp"
 r cplepi " dgnukpi 0Cr cdkr " f k'wo wunep <

Xqno g'? 'R'z'N'z'V' *o ⁴ +'

F lo cpc"<

" R" ? 'Rcplepi "dgnkwp "o +"

" N" ? 'Ngdct lngkpi "dgnkwp "o +"

F0 Rgtj kwpi cp "Xqno g "Rgo dgulcp"

Xqno g" r go dgulcp" f kj kwpi " f gpi cp" o gpi cknep"
r cplepi "dguk" wrcpi cp" f gpi cp" dgtcv' dguk' wrcpi cp" r gt"
o gvt'uguwckf lco gvt "dguk'wrcpi cp" { cpi "f k cnc0Cr cdkr"
f k two wunep"<

Xqno g'?'R'z'Y " *M +'

F lo cpc"<

" R" ? 'Rcplepi "dguk'wrcpi cp"o +"

" Y " ? 'Dgtcv'dguk'wrcpi cp"mi lo +"

G0 Rgtj kwpi cp "Xqno g "Dgvqp"

Xqno g" dgvqp" f kj kwpi " f gpi cp" ectc" o gpi cknep"
ncu'r gpco r cpi "dgvqp" f gpi cp" r cplepi "dgvqp" f cno "ucwcp"
o gvt' mdkn'o ⁵+0Cr cdkr "f k two wunep"<

Xqno g'?'R'z'N'z'V'o ⁵+

F lo cpc"<

" R" ? 'Rcplepi "r gpco r cpi "dgvqp"o +"

" N" ? 'Ngdct "r gpco r cpi "dgvqp"o +"

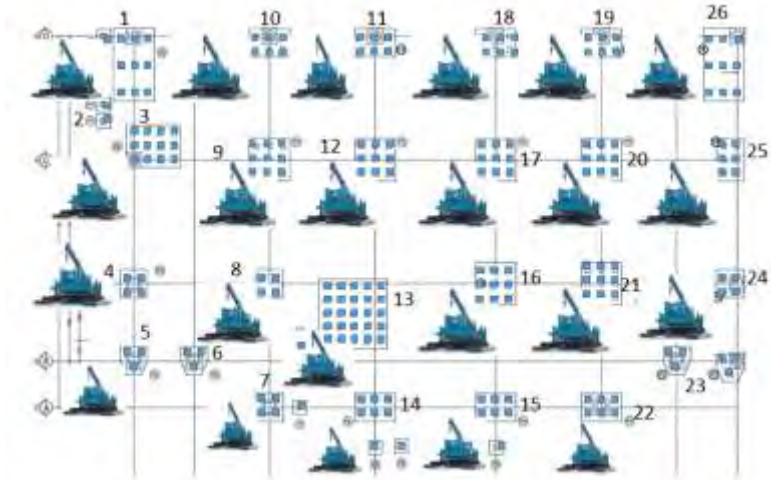
" V" ? "Vlpi i k'dgvqp"o +"

"

405'O gvf g'Rgrmcpccp"

Dgtknw" lpk' cnep" fkwcknep" o gvf g" r grmcpccp" {cpi "
f ki wpncp" f cwo "r gngtlccp"<

4050'Rgngtlccp'Rgo cpecpi cp"



Gambar 2. 1 Alur Pemancangan"

Ugdgrwo "o grmwncp"r gngtlccp"r go cpecpi cp"
f lcy crk' f gpi cp"r gngtlccp"r gtulcr cp." f gpi cp"cuwo uk'
nupf kuk' vpcj " vgrj " f cwo " nupf kuk' o cpecpi 0' Rcf c"
r gngtlccp"r go dcpi wpcp"i gf wpi "lpk"crv" *Lcmkpi "Rkg"*
{cpi " f ki wpncp" o go kknk' dgdcp" 342" vq0' Crv' lpk'
o go kknk'ej co dgt "r k c" f qtqpi +dgtwnwcp"r cplcpi "; "
o "f cp" tqw"r knqp"r gpgncp"ugr cplcpi "9"o 0' Vlcpi "
r cpecpi "dgtwr c"dgwq"rtgecu"o ww/M/722" f ko gpuk'52"
eo " z" 52" eo 0' Dgtknw" lpk' rpi nej " o" rpi nej "
r go cpecpi cp"<

c+Rgrmcpccp'Rgo cpecpi cp"

Nepi nej /rpi nej "r go cpecpi cp."{ckw<

3+" Crv' r cpecpi " f kgo r vncp" uguwk' f gpi cp"
tgpecpc."ugj lpi i c"Cu" *Lcmkpi "Rkg"*lcwjj "r cf c"
r cvqn'vknr cpecpi "{cpi "vgrj " f kgpwnep0

4+ "Vlcpi " f lcpi nev" r cf c" *vkni* cpi nev" { cpi " vgrj " f kugf kncp" r cf c" ugvkr "lcpi 0"

5+ "Vlcpi " f k f k kncp" f k" uco r lpi " *Ftkkpi* " *Ngcf* " f cp" ngr cr "lcpi " f k r cucpi " r cf c" J gmo gv { cpi " vgrj " f k ugvkpi " r quukp { c0

6+ "Wlapi " dcy cj " lcpi " f k f wf wncp" ugectc" egto cv" f kcvu" r cvqn r cpecpi " { cpi " vgrj " f k gpwncp0

7+ " Rgp { gvrp" xgtvknci" lcpi " f k r mwnep" f gpi cp" o gpi cwt " r cplcpi " *Dcemuc* { " uco dklf k r gtnuc" f gpi cp" " Y cvgr cuu" ugj lpi i c" f k r gtqrgj " r quuk" { cpi " dgwn dgwn xgtvknci0

8+ "Rgo cpecpi cp" f cr cv f kj gpvkncp" ugo gpvctc" wpwni" r gp { co dwpi cp" dcwpi " r cpecpi " dgtkwnp { c" dkr " r g xgn" ngr cr "lcpi " o gpecr ck" r g xgn" o wnc" vpcj . " ugf cpi nep" r g xgn" vpcj " ngtcu" { cpi " f kj cter nep" dgmwo " vgtecr ck0

d+ "Wtwcp" r gngtlccp" r qpf cuk'

Rgncmccp " r gngtlccp" r qpf cuk" lcpi " r cpecpi " f ko wckf ct k hpg" 3" Cu" C. " ugectc" dgtwcp" uco r ck hng" Cu" F" * ugwck" f gpi cp" r { qww" ngtlc+0" Vqcr" lcpi " r cpecpi " ugdcp { cni398" *vkni0* "

4004 "Rgngtlccp" I crkcp"

Rgngtlccp " i crkcp" f k r mwnep" f gpi cp" o gpi i wpcnep" *dcenj qg* " wpwni" twcpi cp" { cpi " o go wpi nkpnep" f cp" vpci c" o cpwuk" wpwni" twcpi cp" { cpi " ugo r k0 *Rgngtlccp* " i crkcp" f k r mwnep" ugwckf gpi cp" i co det" tgepcp" f cp" " r gpi wntcp" o gpi i wpcnep" *ycvgrcuu* " j lpi i c" r cf c" grgxcuk" { cpi " f k lpi kncp0 O grgvncp" vpcj " ukuc" i crkcp" ng" vgo r cv { cpi " vgrj " f k gpwncp0 O gpi gegni" ngo dcrk" ngdet. " r cplcpi . " f cp" ngf cmo cp" i crkcp" ugwckf gpi cp" tgepcp0

4005 "Rgngtlccp" Unqhf cp" *Rkg* " *Ecr* "

Rgngtlccp " unqhf cp" *rkg* " *ecr* " f kcy crk" f gpi cp" r go qvpi cp" lcpi " r cpecpi " * r go cpecpi cp" vgrj " f k r mwnep" j lpi i c" ngf cmo cp" vgtgpw" ugwck" f gpi cp"

r gtgpecpccp#0' Ugrnplwp{c." f lo wrck' r go cucpi cp"
dgnkukpi " o gpi i wpenep" r cpgrn' o wnr ngmu" nē{w' f cp"
neuq" r cf c" ukuk' nēct" r gto wneep" r cpgrn' Rcdtkneuk"
wrcpi cp'urqgh'f cp'rk'g'ecr'f krcmwneep'ugectc'o cpwcnf'k'
mqneuk'Dgvqp"{cpi "f ki wpenep"cf crēj "dgvqp't gcf{"o kz."
o ww'M/5220'



I co dēt'404'Dgnkukpi 'Rk'g'Ecr'f cp'Urqh'
Uwo dgt'<F qmwo gpvcuk'r tkdcf k'r gp{ wwp"

"

406'Rngntlccp'Mqrqo "

F key crk'f gpi cp" r gpi wnwcp" vkn/vkni' nqrqo "
f gpi cp" yj gqf qrkj'0' F krcmwneep" r gpi gegneep" wpwni'
o gpi nqpf kukneep" ci ct" vkn/vkni' nqrqo " {cpi " dgtf k'k'
dgpct/dgpct" ntwu" ugectej " uwo dw" z" f cp" uwo dw" {0'
Rgo cucpi cp" dgnkukpi " o gpi i wpenep" dgnkukpi "
o wnr ngmu'Dgvqp"{cpi "f ki wpenep"cf crēj "dgvqp't gcf{"
o kz"o ww'M/5220'Rgpwrcpi cp"nqrqo "f krcmwneep"ugectc"
o cpwcnf'k'hqneuk'r tq{ gn0'



I co det'405'Dgnkwp' O wnr rgnr/Mqno "
Uwo dgt"<f qmwo gpcuk'r tkdcf k'r gp{ wuwp"
"

405'Rngtllccp'Dcrqni'

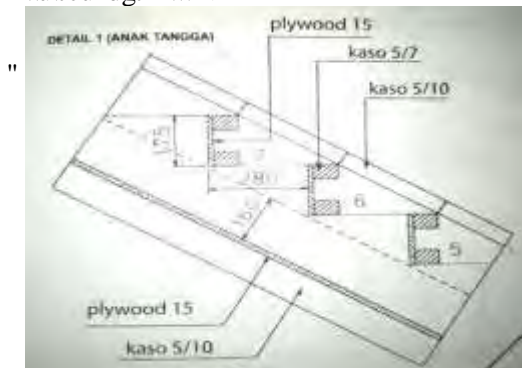
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{ckw'dcrqni'V"*Vgg"dgco u+f cp"Dcrqni'N"*N"Dgco u#0'
F crco "r nggtllccp"dcqni"j cn'vgr gpvpi "dgtef c"r cf c"
dngtllccp'dgnkwp' 0T cpi ne'dgnkwp' 'j ctwu'b go gpwj k'
5"vj cr cp"r grncupccp">{ckw"<uncdkk/. "ut gpi yj . "f cp"
ugt xlegdkk/0' Rgo cucpi cp" r gpcj cp" dgnkwp' " dcrqni'
{cpi "vgr gpvpi "o grk wk'r go cucpi cp" lqkv' f kdcy cj "
dgco "ukf g" {cpi "dgthwpi uk'wpwn'o gpi wt cpi k'rgpf wcp."
f cp"r go cucpi cp"uww'o ktpi "wpwn'o gpcj cp"vgncpcp"
dgvqp0' Ugvrj " ugo wcp{c" ukcr ." dctw' f kcrnwncp"
r go dgukcp"f cp"ngo wf kcp"r gpi geqtcp">{cpi "f kcrnwncp"
dgtuco ccp"f gpi cp"r gpi geqtcp"r rcv'ncpck0'Dgvqp">{cpi "
f ki wpcncp'krj "dgvqp"t gcf{ "b k' b wwM/5220'
"
"
"
"
"

"

"

4050 "Rngntlccp" Vcpi i c"

Rngntlccp" vcpi i c" fko wrck' fetk' r ngntlccp"
dgnkukpi 0'Rngntlccp"dgnkukpi "r nv'vcpi i c" f kcmwnep"
uco c" ugr gtw' r go dwcwp" r nv' npck' {ckw' f gpi cp"
r go cucpi cp" rny qqf "r cf c'tcpi ne rny qqf 0Mgo wf kcp"
dctw' f krcplwnep" r gpwrcpi cp" r nv' vcpi i c0' Wpwni'
dgnkukpi "cpcni'vcpi i c." fko gpuk'dgnkukpi "f kdwc'uguwck"
r gtgpecpccp" cpcni'vcpi i c" {cpi " ngo wf kcp" f kncknep"
r cf c" denqm' neuq0' Wpwni' f gvckl' f cr cv' f kklj cv' r cf c"
kwt cuk'dgt knw"<



I co det "409" FgvcklCpcniVcpi i c"

Uwo dgt "<RV0RR" Rgtugtq+I gpgtcnEqpvtcevqt."4225"

Ugvrcj " r go dwcwp" dgnkukpi " ugrguck"
f krcplwnep" f gpi cp" r go dgukcp" cpcni'vcpi i c" f cp"
r gpi geqtcpi "vcpi i c0"

4050 "Rngntlccp" Tcpi ne f cp "Rgpwwr "Cvr "

Fcrco "r tq {gnlr go dcpi wpcp" i gf wpi "DRMCF"
Lcy c" Vlo wt "kpko gpi i wpcnep" cvr "tcpi ne" dele" f gpi cp"
o ww/DL/59 f cp "dcwf gpi cp" o ww/C/5470 Tcpi ne "hxf c"
nwf c" dele" kp' f k cdt knck' *tcnk+ f k' nqneuk' r tq {gm"
ngo wf kcp" f kpi nv' o gpi i wpcnep" nevqn' wpwni'
f k cucpi "r cf c' hmqo "r gf gucn0' Uco dwpi cp "f ct k hmqo "

r gpf gnlmwf c"ó"mwf c" f cp" hqjgo "r gf guvno gpi i wpcnep"
 cpi mwt" o ww" J VD0' Ugvgrj " tpi ne" mwf c" ó" mwf c"
 vgr cucpi . "dctw'f kcmwncp"r go cucpi cp"i qtf kpi "f kcmwk"
 f gpi cp"r go cucpi cp"r gpi i cpwpi "i qtf kpi "f cp" kncvcp"
 cpi kp0'



Gambar 2. 8 Pekerjaan Rangka Atap
 Uwo dgt "F qmwo gpvcuk'Rtkdcf k'Rgp{ wuwpi"
 "

406'Rt qf wmkxkcu'Crcv'Dgtcv'

"

Rtqf wmkxkcu" crcv" dgtcv' f lr gpi ctwj k' qngj " dgdgter c"
 cur gm" ugr gtvk' y cmw' ukmwu." ghukgpuk' crcv" f cp" xqmw g"
 r gngtlccp0' Y cmw' ukmwu" *E{erg" wko g" I" EV+ " o gtw cncp"
 ngi kcvp" { cpi "f kcmwncp" dgtwrcpi 0Rgngtlccp" wco c" f k'f crco "
 ngi kcvp" vgtugdw" cf crj "o gpi i crk" o go wcv" o go kpf cj nep."
 o go dqpi net" o wcvp. "f cp" ngo dcrk'ng" ngi kcvp" cy cr0Y cmw'
 ukmwu" vgtf k'k' f ct k' dgdgter c" wpuwt. " ugr gtvk' y cmw' o wcv' cew'
 nqcf kpi "wko g" *NV+ "y cmw' cpi mw' j cwkpki "wko g" *J V+ "y cmw'
 ngo dcrk' gwt p "wko g" *TV+ "y cmw' dqpi net" f wo r kpi "wko g" *F V+ "
 f cp" y cmw' wpi i w" Ur qwkpi "wko g" *UV+0F gpi cp" f go knkcp" *K0'
 Uwu{ "Hcvpc" Tquk{ cpvk" 422: < "

$$CT = LT + HT + DT + RT + ST''$$

Ugf cpi nep" f crco " r gcmucpccp" r gngtlccp" f gpi cp"
 o gpi i wpcnep" crcv' dgtcv' vgtf cr cv' hcmqt" { cpi "o go r gpi ctwj k'

r tqf wmkxkcu" crv" {ckw" ghulguk" crv" Ectc" {cpi " wo wo " fkr cnek' wpwni" o gpgpwnep" ghulguk" crv" cf crj " f gpi cp" o gpi j kwpi "dgter c"o gpk'crv'gtugdw'dgngtlc"ugectc"ghgmki" f crco "ucw'lco 0"

Ugj kpi i c" r tqf wmkxkcu" crv" dgtecv" f cr cv" f kj kwpi " f gpi cp"r gtdcpf kpi cp" f ctk'ner cukcu" f gpi cp" e/erg"ko g" "<"

$$Produktivitas = \frac{kapasitas}{CT (menit)} x efisiensi$$

Wo wo p{c"y cmw'ukmw"crv'f kgver nep" f crco "o gpk' ugf cpi nep" r tqf wmkxkcu" crv" f kj kwpi " f crco " r tqf wmkllco " . ugj kpi i c" r gtnw'cf c" r gtwdcj cp" f ctk'o gpk'ng'lco 00 cne'two wu" f lcvcu"o gplcf k' "<"

$$Produktivitas = Kapasitas \frac{60}{CT (menit)} x efisiensi$$

Dgtnw" dgdgter c" ngvgtepi cp" o gpi gpck' crv" dgtecv" {cpi " f ki wpcnep" f crco " r tq{gnr go dcp i wpcp" i gf wpi "DRCMF" " Lcy c" Vko wt"ugt c" e/erg"ko g/p{c" *K0Uwu{ "Hcvgpc" Tqukk cpk" 422: + "<"

4068 "F wo r "Vt wem"

F wo r " Vt wem" o gtwr cnepe" crv" wcpur qt wuk' wpwni" o gpi cpi mw'wpcj . "ngtkn"dcw."r cukt. " f cp"ugdc i clp {c" wpwni" f ldey c" ngnwt" cew" o cuwni" ng" f crco " r tq{gn0 Rtqf wmkxkcu"ucw"crv'ugrwn"vgti cpwpi " f ctk'y cmw' ukmw0Y cmw'ukmw"twni'gtf k k'f ctk'y cmw'r gto wncp." y cmw' r gpi cpi nwcpe." y cmw' r go dqpi nctep." y cmw' r gtlcrpep" ngo dcrk" f cp" y cmw' cptk0 Two wu" {cpi " f kr cnek'wpwni"o gpi j kwpi " r tqf wmkxkcu"twni'cf crj " "<"

$$Prod = Kapasitas x \frac{60}{CT} x efisiensi$$

4064 "Guexcvqt "TDcenj qg"

Guexcvqt "TDcenj qg."cf crj "crv'wpwni"o gpi i ctk'f crco " unerc"dguct."ugr gt k'f crco " r go dwcwp" dcugo gpv" cew" ucwtp0lgpki"o cvgtkn'dgtr gpi ctwj " f crco " r gtj kwpi cp" r tqf wmkxkcu" dcenj qg0 Rpggpwcp" y cmw' ukmw"

dcenj qg" f k f cuctnēp" r c f c" r go k r j c p" nē r c u k s c u" d w e n g ō
 Two wu" { c p i " f k c nē k' w p w n i' o g p i j k w p i " r t q f w m k k s c u"
 dcenj qg" c f c r c j " <

$$Produktivitas = Volume \cdot \frac{60}{CT} \cdot S \cdot BFF \cdot efisiensi$$

R t q f w m k k s c u" f k j k w p i " f c r c o " o 5 l l c o . ' E V " c f c r c j " y c m w "
 u k m w u . " U " c f c r c j " h c m q t " n q t g m u k " w p w n i' n g f c r c o c p " f c p "
 u w f w ' r w c t . " f c p " D H H " c f c r c j " h c m q t " n q t g m u k " w p w n i' c r c v "
 i c r k ō

30I c r k p' V c p c j "



I c o d e t ' 40 ; ' D c e n j q g I G u n e x c v t "

U w o d g t " < * f q m w o g p v c u k r t k d c f k r g p { w w p + "

"

R g t j k w p i c p " r g n g t l c c p " I c r k p " v c p c j "
 o g p i i w p c n e " c p c r k u c " J U R M ' 4237 " U w t d c { c " d e k n i'
 w p w n i' o c v g t k c n " w r c j " f c p " c r c v ō R q f w m k k s c u " c r c v "
 r g n g t l c c p " o g p i c e w ' r c f c " n q g h k u l g p " f k J U R M ' 4237 "
 U w t d c { c ō

40O g p l o d w p ' M g o d c r k '

O g p w t w " U q g f t c l e v " * 3 ; ; 6 + " r g n g t l c c p " l p k "
 f c r c v " f k n g t l c n e p " f g p i c p " v c p i c p " c v e w " f g p i c p "
 d c e n j q g " I g u n e x c v t ō J c u k i n g t l e p { c " v g t i c p w p i " f c t k "
 n g c f c c p " u g v g o r c v " f c p " d c i c k o c p c " e c t e " r g o c f c v c p "
 v k o d w p c p " v g t u g d w ō

"

"

4065 "Lcenl'p'Rk'g'Ocej'k'p'g"

Lcenl'p'Rk'g."cf'cr'j "cr'v'dgt'cv'nq'pux'wuk" {cpi " f'ki'wpcn'p"wp'wnl'o go'cpecpi "v'kpi "r'cpecpi "f'gpi'cp" o go'dgt'knc'p"v'gn'p'cp'r'cf'c"v'kpi "r'cpecpi 0Cf'cr'j "u'w'cw' uk'ng'o "r go'cpecpi'cp" r'qpf'cuk" v'kpi "r'cpecpi " {cpi " r'gr'nc'p'ccpp {c'f'k'gn'p"o'cu'wn'ng"f'cr'o "v'c'p'j "f'gpi'cp" o'gpi'i'wpcn'p" f'qpi'nt'cn'l'j'k'f't'cw'ku" {cpi "f'k'd'gt'k'dg'd'cp" eq'wp'v'g't'y'g'k'i'j'v' "ug'j'k'p'i'i'c" "v'f'c'm'l'o'gp'k'o'dw'm'p"i'gv'ct'ep'0' I'c' {c'v'gn'p" f'qpi'nt'cn'l'f'cr'cv"nc'p'i'ux'pi "f'k'd'cec"o'gr'nc'k" o'cp'q'o'vg't."ug'j'k'p'i'i'c"i'c' {c'v'gn'p"v'kpi "f'cr'cv"f'k'g'v'j'v'k' ug'v'kr"o'gp'ec'r'ck'ng'f'cr'o'cp"v'gt'v'p'w'0'R'cf'c"r'gng't'l'cc'p" r'go'd'cpi'w'p'cp"i'gf'w'pi "k'p'k" cr'v' Lcenl' p" r'k'g" {cpi " f'ki'wpcn'p"o go'k'k'k'k'dg'd'cp". 2"v'q'p"."342"v'q'p'f'cp'462"v'q'p'0' Cr'v'k'p'k'o go'k'k'k'k'ej'co'dgt'""r'k'r'c" f'q't'q'p'i "+"d'gt'w'w'x'cp" r'cpl'cpi "; 'o'f'cp"t'q'w'f'r'k'v'q'p'r'gp'g'nc'p+"ug'r'cpl'cpi '9"o'0' Cr'v'r'gp'g'nc'p"v'kpi "r'cpecpi "d'gt'cf'c"f'k'k'uk'k'f'gr'cp" f'cp" v'gpi'cj " o'g'ul'p" {cpi " f'k'ng'k'k'k'p'i'k' dg'd'cp" eq'wp'v'g't'y'g'k'i'j'v'0' Cr'v'k'p'k' d'gt'i'g't'cm'l'o'gpi'i'wpcn'p"t'gn' {cpi "f'cr'cv"dg't'r'k'p'f'cj /r'k'p'f'cj "f'gpi'cp" d'cp'w'w'cp"o'g'ul'p" j'k'f't'q'r'ku'r'cf'c'd'ci'k'cp'd'cy'cj "o'g'ul'p'0' Rt'q'f'w'm'k'x'k'cu'Cr'v'<

$$\text{Produktivitas} = \frac{\text{kapasitas}}{\text{CT (menit)}} \text{efisiensi"}$$



I'co'det'4032'O'g'ul'p'R'c'p'c'p'i'L'c'c'c'p'i'R'k'g'

U'wo'dgt'<"f'q'm'wo'gp'w'c'uk'r't'k'd'cf'k'r'gp {w'w'p+" "

4066"Vt weni'O kzt 'f cp'Eqpet gvg'Rwo r "

42X-Meter Concrete Pump



SL/SLA 7

I co det '4033"Vt wni'O kzt 'f cp'Eqpet gvg'Rwo r "

*uwo dgt "ZEHC"dtquw "f cp"Rwuog kungt "Co gtnk "Dtquw "+"
"

Rgpi cpi mwep" dgvgp" tgc f {o kz "o gpi i wpcnep"
vt weni'o kzt O'O qdki vt weni'o kzt "kp k'ugr k p" f ki wpcnep"
wpwni'o gpi cpi mw" dgvgp" ugi ct "tgc f {o kz. "vgcr k' lwi c"
f ki wpcnep" wpwni' o gpi cf wni' dgvgp O' Mcr cukcu" vt weni'
o kzt "kp k'dgt nuct" cpvctc "6.8" o ⁵ uco r ck' r gdlj "f ctk' 33.7"
o ⁵ O'

Cf c" dgdgter c" j cn' { cpi " r gtnw' f k r gtj cvkncp"
f crco " r gpi cpi mwep" dgvgp O' [cpi " r gtwco c" cf crcj "
ugi tgi cuk' Ugi tgucuk' f cr cv' vgtlcf k' r cf c" ucev'
r gpi cpi mwep" dgvgp" r rucuk O' Wpwni' o gpi j kpf ctk'
ugi tgi cuk' o cnc" vpi i k' lcvwj " dgvgp" r cf c" ucev'
f kngwctnep" f ctk' ccv" f lo cuwncp" ng" f crco " f two "

o kzgt "j ctwu" rgdlj "ngekl" fctk' 3.7" o ." ngewck' lknē"
o gpi i wpcnep"r k c" **Eqpet gvg'Rwo r-θ*

Eqpet gvg'Rwo r. f ki wpcnep"wpwnb gp{cnwtnep"
dgvqp" fctk' *itwen'* o kzgt" o gpwlv" ctgc" {cpi" cnēp"
f kcmwnep" r gpi geqtc p0' Wpwnl' o gpecr ck' grgxcuk'
r gpi geqtc p"vgt vgpw."o cnē"cnv'lpk'f kgpi nē r k'f gpi cp"
r gpi cwt" o gneplu0' Mgo co r wcp" cnv' lpk' f cr cv"
o gpi j cpvct" dgvqp" uco r ck' f gpi cp" 342" o ⁵llco 0'
Rtqf wmkxkcucnēvf cr cv'f kmwcp i kf gpi cp"b go r gtngēkl'
f lco gvgt" r k c0' Ltcm' j cpvct" dgvqp" ugectc" j qtk qpvcn'
f cr cv' o gpecr ck' uglcwj "o cmuko cni'522"o 0"ugf cpi nēp"
ugectc" xgt wknēl' o gpecr ck' uglcwj "o cmuko cni' 322" o 0'
Rgo dgrnēp" r k c" f cr cv' o gpi wcp i k' ngo co r wcp"
j cpvct0'

Xqno g" o kzgt" f kj kwpi " fctk' xqno g" ugkcr "
nqo r qpqp"eco r wtcp"dgvqp"vgtugdw."f kj kwpi "f gpi cp"
o gpi i wpcnep"two wu'r gtj kwpi cp"<

$$\text{Xqno g'?} = \frac{\text{massa material (kg)}}{1000 \times \text{Berat jenis } (\frac{gr}{cm^3})} \dots$$

F crco " o gpi j kwpi " xqno g" ci tgi cv." o cnē"
ci tgi cv' j ctwu" f crco " nupf kuk' dcucj " r gto wnecp" cēw"
UUF" **Umlceg" ucwmcvgf" ft{-θ'* F gpi cp" f go knēcp."
xqno g"ck' {cpi "f kj kwpi "kf cni'rgdlj "cēw wpcnēwcp i 0'
c0 Rtqf wmkxkcucnēwcp" *eqpet gvg'rwo r"<*

- Qwr wu'r kwqp"ukf g" fctk' *eqpet gvg'rwo r"*
?"334"o ⁵llco " *two dgt" < dtquw" *eqpet gvg'rwo r"*
vgtro r k +"
- F kcuwo uknēp" nupf kuk' qr gtcuk' cnv" f cp"
r go grkj ctccp"o gulk" f crco "nupf kuk'dckni'2.97-θ'
- F kcuwo uknēp" Mgo co r wcp" qr gtcvqt"
f knēvgi qtknēp"vgtco r k i'2.: 2-θ'
- F kcuwo uknēp" nupf kuk' ewcec" Vgtcpi ." Ugi ct"
*2.; 2-θ'

"

- Rtqf wmkxkcu"eqpet gvg'rwo r""<
 ?'334'o ⁵lco 'z'2.97'z'2.: 2.'z'2.; "
 ?'82.6: 'o ⁵lco "
 "

d0 Rtqf wmkxkcu"Vt weniO kz gt "

- Mcr cukcu"pqto cni"Vt weniO kz gt "?'9'o ⁵*uwo dgt "<dtquwt"
 Vt weniO kz gt "vgtrco r k +"
 - Lwo rcj "Vt weniO kz gt "f cpi 'f ki wpcnɛp"<
 t weniO kz gt ? " ^{Volume} _____ "
 kapasitas mixer

Vcdgri403'Gltgpk'Qr gt cukpcni'Crv'f cp'Rgo grlj ctccp"

Mqpf kuk' Qr gt cuk'Crv'	Rgo grlj ctccp'Crv'				
	Dckni' Ugnrik'	Dckni'	Ugf cpi "	Dwtwni'	Dwtwni' Ugnrik'
Dckni'Ugnrik'	2.: 5"	2.: 3"	2.98"	2.92"	2.85"
Dckni'	2.9: "	2.97"	2.93"	2.87"	2.82"
Ugf cpi "	2.94"	2.8; "	2.87"	2.82"	2.76"
Dwtwni'	2.85"	2.83"	2.79"	2.74"	2.67"
Dwtwni'Ugnrik'	2.74"	2.72"	2.69"	2.64"	2.54"

*uwo dgt "<"Dwmw'T glgt gpuk'wpwmi'Mqpxt cmqt "Dcpi wpcp"
 I gf wpi 'f cp'Ukrk02250J cni'763+ "

Vcdgri404'MwcnHkrukMvgtco r krp'Qr gt cwt "

MwcnHkruk'	K gpvku'	P krck'
Vgtco r ki'	c0Rgpf kf krp"UVO luf gtclcv' d0Ugt wHkruk'UO RIURR"*Kf cp"cvw" e0Rgpi ciro cp"@8222'lco "	2.: 2"
Ewnw "	c0Rgpf kf krp"UVO luf gtclcv' d0Ugt wHkruk'UO RIURR"*Kf cp"cvw" e0Rgpi ciro cp"6222'6'8222'lco "	2.92"
Ugf cpi "	c0Rgpf kf krp"UVO luf gtclcv' d0Ugt wHkruk'UO RIURR"*Kf cp"cvw" e0Rgpi ciro cp"4222'6'6222'lco "	2.87"
Mwtcpi "	c0Rgpf kf krp"UVO luf gtclcv' d0Ugt wHkruk'f cp"cvw" e0Rgpi ciro cp">"5222'lco "	2.72"

*iwo dgt "<"Dwmw'Tglgt gpuk'wpwni'Mqpyt cmqt "Dcpi wpcp"
I gf wpi 'fcp'Uk-k042250J cn764+ "

Vcdgn405'Mqpf kukEwcec"

Mqpf kukEwcec"	Hcmqt"	
	O gpkvllco "	' "
Vgtcpi .'Ugi ct"	77 82"	2.; 2"
Vgtcpi .'Rpecu'Dgtf gdw'	72 82"	2.: 5"
O gpf wpi "	67 82"	2.97"
I gcr "	62 82"	2.88"

*iwo dgt "<"Dwmw'Tglgt gpuk'wpwni'Mqpyt cmqt "Dcpi wpcp"
I gf wpi 'fcp'Uk-k042250J cn764+ "

c0 Y cmw"IF wtuk'Rngtllcp"

- Y cmw'r gtukr cp"*3+ "
- ✓ Rgpi cwtcp'r quuk" "
- ✓ Rgo cucpi cp'r k c" "
- ✓ Krg'twenlo kzgt" " "
- Y cmw'qr gtcukqpcn"*4+ "
- ? " Volume "
- output concrete pump
- Y cmw'wco dcj "*5+ "
- ✓ Rgti cpvlep'tweni'
- ✓ Wk'uno r "
- Y cmw'r cuec'r grmcpcpp"*6+ "
- ✓ Rgo dgtukj cp'r qo r c"
- ✓ Rgo dqpi nctcp'r k c"
- ✓ Rgtukr cp'ngo dcik'
- Vqen'y cmw'
- ? "4"- "*3"- "5"- "6+"z" twenlo kzgt'*****"

407'F wtuk'Rngtllcp"

Rgtj kwpi cp"f wtuk'r rngtllcp"o gpi i wpcnæp"J URM'
4237"Uwtcdc{c0'F crco "r gtj kwpi cp"f wtuk'r rngtllcp"f cr cv"

f kgpwnep" f gpi cp" nqghkukp" f ctk' J URM" {cpi " vgrj " f kgpwnep0"

Kapasitas Produksi per hari

$$= \frac{1 \text{ hari}}{\text{Koefisien terbesar}} \times 1 \text{ satuan volume}$$

"

"Ugrnplwp{c." f ctk' ukp' cnp" f kf cr cv" nco c lf wtcul" r gngtlccp" f gpi cp" o gpi i wpcnep" two wu" <

$$\text{Durasi} = \frac{\text{Volume}_{\text{pekerjaan}}}{\text{kapasitas produksi} \times \text{jumlah grup}}$$

"

408'Tgpecpc'Cpi i ctcpc'Dlc{c'Rngtlccp"

408'Cpi i ctcpc'Dlc{c'Rngtlccp"

Cpi i ctcpc' dlc{c' r gngtlccp" uwcw" depi wpcp" kcrj " o gpi j kwpi " dcp{cnp{c" dlc{c" {cpi " f k gtwnep" wpmndcpcp lo cvgtkn" r gtcrcvp" f cp" wr cj " vgcpi c" ngtlc" dgtf cuctnep" cpcrkukl' r gtj kwpi cp" xqno g0'

Ugeetc" wo wo . " cpi i ctcpc' dlc{c' r gngtlccp" f cr cv" f kp{cvcnep" ugdc c k' dgtknw" <

TCD"? "Σ (volume × harga satuan pekerjaan)"

"

4084"J cti c"Ucwep"RqnqniRtqf wmkf gpi cp"Rgtcrvcp"

Mqo r qpqp" ó" nqo r qpqp" cpi i ctcpc" {cpi " o go r gpi ctwj k' r gtj kwpi cp" j cti c" ucwep" r gngtlccp" uwcw" rtq{gni vgtf k k' f ctk' dgdgtrc" nqo r qpqp. " f kcpvctep{c" cf crj " dlc{c" npi uwp" {cpi " vgtf k k' f ctk' o cvgtkn" r gtcrcvp. " f cp" vgcpi c" ngtlc0'

Wpwnlo gpi j kwpi " j cti c" ucwep" r gngtlc" *J UR+ f cr cvf ki wpcnep" two wu" ugf gtj cpc" ugdc c k' dgtknw" <

$$\text{HSP} = \frac{\text{Biaya produksi total}}{\text{Produksi peralatan}}$$

"

4085"J cti c"Ucwep"Rngtlccp"

J cti c" ucwep" r gngtlccp" kcrj " lwo n j " j cti c" dcj cp. " r gtcrcvp" f cp" wr cj " vgcpi c" ngtlc" dgtf cuctnep"

cepehuc"r gtj kwpi cp0J cti c"dej cp"fk r gtqngj "f ctk'j cti c"
r cuetcp"fk' r qneuk" r tq{gn0' Dgi kw' lwi c" f gpi cp" wr ej "
vgpci c"ngt lc" {cpi "fk' cr cwnep"fk' cgtcj "r qneuk" r tq{gn0"

J cti c"ucwcp"dej cp"fp"wr ej "vgpci c"ngt lc"fk'
ugvkr "f cgtcj "dgt dgc/dgc c0' Lcf k" f cnc "o gpi j kwpi "
f cp"o gp{wuwpcpi i ctep"dlc{c"j ctwu'dgtr gf qo cp"r cf c"
j cti c"ucwcp"dej cp"fp"wr ej "vgpci c"ngt lc"fk' r cuetcp"
f cp"r qneuk" r gngtlccp0' F cnc "r gp{wuwpcp"wi cu"cnj k"
lpk"j cti c"ucwcp"dej cp"fp"wr ej "vgpci c"ngt lc" {cpi "
f ki wpcnep"cf cncj "J URM'4237"Uwtcdc{c0'

F cnc "j cti c"ucwcp" r gngtlccp" vgtfk'k' f ctk'5"
nqo r qpqp. "{cnpk'j cti c"ucwcp"dej cp lo cvgtkn"j cti c"
ucwcp" cncv" f cp"j cti c"ucwcp"wr ej "vgpci c"ngt lc0'
"

40'O gvqf qmij kRgplcf y cncp"

Rgtgpecpcp" lcf y cni' r grncupccp" r gngtlccp"
r go dcpj wpcp"o gpi i wpcnep" Mwtxc"U'f cp"o gvqf g" Cevkxk' "qp"
Cttqy "CQC+ "{ckw'ugdcj ck'dgtknw'<
"

400B" Mwtxc"U"

Mwtxc"U'cf cncj "ugdwcj "i tchni' {cpi "o gpwplwnep"
ngo clwcp" r tq{gn' dgtf cuctnep" ngi k'wcp." y cnw' f cp"
dqdqv' r gngtlccp" {cpi "fk' grtgupvcuknep" ugdcj ck'
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Xkwerucuk' mwtxc" U' f cr cv" o go dgtknep" kphqto cuk'
o gpi gpckhgo clwcp" r tq{gn'f gpi cp"o go dcpf kpi napp{c"
vgtj cf cr "lcf y cni' t gpecpc0' F ctk'ukpncj "f kngvj wk' cr cncj "
cf c" nngvtrco d'wcp" c'w' r gtegr c'wcp" lcf y cni'
r tq{gn0' f k'wcp" vgtugdw' f cr cv"o gpclcf k' kphqto cuk'cy cni'
i wpc" o grncwncp" wpcncp" ngtgmik' f cnc " r tqgu"
r gpi gpf cncp" lcf y cni"

Wpwni' o go d'wcv' Mwtxc" U." lwo ncj " r tqgpcwug"
mwo wrvkh' d'wcv' o cuki /o cuki "ngi k'wcp" r cf c" uwcw"
r gtlqf g" f k' cpvctc" f w'cuk' r tq{gn' f k' r qneup" vgtj cf cr "
uwo dw' xgtvkn' ugi kpi i c" d'kncj "j cukp{c" f k'j wdwpi nep"

f gpi cp" i ctku." cneþ" o go dgpwni' mwtxc" U' Dgpwni' f go knkcp"vgtlcf k'netgpc"xqno g'r gngtlccp"r cf c"dei kcp" cy cni' dkcucp{c" o cuki" ug f knkx." ngo wf kcp" r cf c" r gtvgpi cj cp"o gplpi nev'f cno "lwo ncj "ewnw "dguct."rcnw" r cf c"cnj k'r tq{gnlxqno g'ngi kvcþ"ngo dcrk'o gpi geko'

Wpwni'o gpgpwnep"dqdv'r gngtlccp."r gpf gnevcp" {cpi "f krcmwneþ" f cr cv' dgtw c" r gtj kwpi cp" r gtugpvcug" dgtf cuctneþ" dlc{c" r gt" kgo "r gngtlccp lngi kvcþ" f kdc i k' vqen' cpi i ctep" cvw" dgtf cuctneþ" xqno g" tspecpc" f ctk' nqo r qpþp'ngi kvcþ"vgtj cf cr "xqno g'vqen'ngi kvcþo'

Rep{wup" o gpi i wþeneþ" Mwtxc" oUo" wpwni' o gp{clneþ"r tqi tgu"r gngtlccp"dgtf cuctneþ"y cmw'f cp" dlc{c"r gngtlccp."f knetgpcneþ"f gpi cp"Mtxc"oUo" f cr cv' f kwplwneþ" rēdlj " tlpek" o gpi gpck' f wtuk' f cp" dlc{c" r gngtlccp."vgtc"dqdv'kcr 'r gngtlccp"vgtj cf cr 'hwo wrcvkh" dqdv'r gngtlccpo'

4004'F kci tco "Cevkxh' Qp' Cttqy "CQC+"f gpi cp"O gvqf g' lcnwt" Mtiku"ERO +"

O gvqf g'ERO "Et kkecn'Rcy "O gvj qf +lpk'f knþpni' cf cp{c" lcnwt" ntkku." {ckw' lcnwt" {cpi "o go knkn'tcpi neþcp" nqo r qpþp" o' nqo r qpþp" ngi kvcþ" f gpi cp" vqen' lwo ncj " y cmw' vgrco c" f cp" o gpwplwneþ" mwtwp" y cmw' r gp{grucp"r tq{gm' {cpi "vtegr cv' lcf k' lcnwt" ntkku"vgtf k' f ctk' tēpi neþcp" ngi kvcþ" ntkku." f lo wrk' f ctk' ngi kvcþ" r gtvc c" uco r ck' r cf c" ngi kvcþ" vgtēnj k" r tq{gn' O cnpc" lcnwt" ntkku" r gpvpi "dei k' r grncpc" r tq{gm' netgpc" r cf c" lcnwt" kp' vgrvcni' ngi kvcþ" /" ngi kvcþ" {cpi " dkr" r grncpcpp{c" vgrco dc' cneþ" o gp{gcdneþ" ngvgrco dcvp"r tq{gn'ugectc"ngugntwj cp'Ugectc'tkpi neu." Nþvcup"Mtiku'cf cnj "hþvcup" f gpi cp" hwo r wrp'ngi kvcþ" {cpi "o go r wp{ck'f wtuk'vgr cplēpi " {cpi "f cr cv'f knþvj vk' dkr'ngi kvcpp{c"o go r wp{ck'Vqen'Hrꝑcv: "VH"? "20'

C0 Vgto kþqni k'f cp'Rgtj kwpi cp"

F cno " CQC" I" o gvqf g" lcnwt" ntkku" *ERO + f knþpni' kkrēj 'kkrēj "ugdc i ck'dgtknw"<

- 3+ VG"? "G"< Y cmw" r cŋpi " cy cŋ' r gŋkŋky c" *gxgpn+
f cr cv""vgtlcf kŋ'
4+ VN"? "N"< Y cmw" r cŋpi " cŋj k" r gŋkŋky c" dŋrgj "
vgtlcf kŋ'
5+ GU" <Y cmw'o wŋkŋ' r cŋpi "cy cŋ'uwcw'ŋgi kŋcvp"
6+ NU" < Y cmw" r cŋpi " cŋj k" ŋgi kŋcvp" dŋrgj "
f kŋ wŋkŋ'
7+ HU" < Y cmw" r cŋpi " cŋj k" ŋgi kŋcvp" dŋrgj "
ugrguck"
8+ F "" <Mŋwŋp'y cmw'uwcw'ŋgi kŋcvp"
"

O gŋqf g" lcnŋt " ntŋku" *ERO + " f cr cv" f kŋf gpwŋkŋcuk'
cf cp{ c"lcnŋt"ntŋku"f gpi cp""o gpi i wpcnŋp"j kŋpi cp"o clw'
ugf cpi nŋp"wpwŋl'o gpi gŋcj vŋ'y cmw" f cp"vpi i cŋ' r cŋpi "
cŋj k" ntŋc" ōo culj ō" f cr cv" o go wŋkŋ' f cp" o gpi cŋj kŋk'
ŋgi kŋcvp"vpr c'o gpwŋf c'hŋwŋp'y cmw'r gp{ gŋguckp'r tq{ gŋl'
ugectc'ŋgugŋwŋj cp'f cr cv'f kŋ kŋpi "o gpi i wpcnŋp"j kŋpi cp"
o wŋf wŋt" { cpi "vgrcj "f kŋ cukŋp" f ct kŋ kŋpi cp"o clwŋ'
D0 lcnŋt "Mŋkku" f cp" Hŋqcv"

lcnŋt " ntŋku" cf crcj " lcnŋt" { cpi " o go kŋkŋk' f wŋcuk'
vgr cplcpi " { cpi "o gŋcŋkŋ' lctŋpi cpŋ' Ct vŋ' r gpvŋpi " f ct kŋ'
lcnŋt "ntŋku" cf crcj "dcj y c" lŋcŋt "ŋgi kŋcvp" { cpi "vgr gŋcŋl'
r cf c" lcnŋt "ntŋku" vgtwŋf c. "o cŋcŋ' y cmw" r gp{ gŋguckp"
r tq{ gŋl' ugectc" ŋgugŋwŋj cp" qŋqo cvŋu" lwi c" cŋcŋp"
vgtwŋf cŋ'

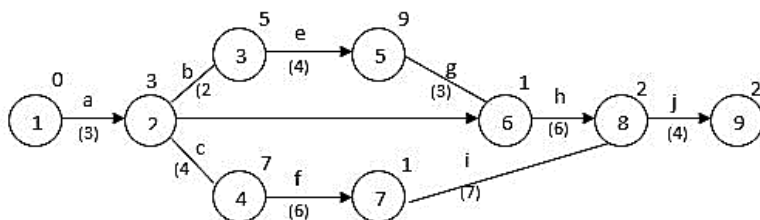
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y cmw' ŋgi kŋcvp" dŋrgj " f kŋwŋf c. "vpr c" o go r gpi ctŋj kŋ'
lcf y cŋl' gp{ gŋguckp'r tq{ gŋl'ugectc'ŋgugŋwŋj cpŋ' Hŋqcv"
vŋwŋl' f cr cv'f kŋ kŋpi " f gpi cp" o gpi i wpcnŋp" tŋo wu" <VH"
? "NHŋ' "GH' cŋw' VH"? "NUŋ' "GUŋ'

Vqŋcŋlŋqcv' dgti wpc' wpwŋlŋo gpŋpŋwŋcŋp' lcnŋt "ntŋku."
f kŋ cpc' pŋcŋkŋ' VH"? "2ŋ'

VHŋl"? "NGVŋ' ŋ' "GGVŋl' ŋ' " f wŋcuk' *gxgpn' / qt kŋpŋvgf + "
""? "NHŋ' "GH"? "NUŋ' "GU" *Cŋvŋkŋf 'Qt kŋpŋvgf + "
F kŋ cpc."

NGVI"? 'y cmw'ugruek'r cnp 'ro dev'
 GGVI"? 'y cmw'o wck'r cnp 'cy en'
 NH' *Ncgvu' Hkpj + " ? " uccv' r cnp " ro dev" wpmn'
 cnj k' 'ngi kcvp"
 NU* Ncgvu' Uctv+? "uccv'r cnp 'ro dev' wpmn' wck'
 ngi kcvp"

Rgp{ wwp" o gpi i wpcnp" Fki tco " Cevkxk" Qp"
 Cttqy " *CQC+ f gpi cp" o gvqf g" Etkkecn" Rcy " Ogj qf"
 *ERO + f knetgpcnp" wpmn' o gpwplwncp" lcnw" ntkku"
 { cpi " vgtlef k' r cf c" ngugnwtvj cp" lef y cn' r gngtlccp"
 F gpi cp" cf cp{ c" lcnw" ntkku." o cnc" r gp{ wwp" f cr cv'
 o gpi gvcj wk' kgo " r gngtlccp" { cpi " wf cni' dqngj "
 o gpi cno k' ngvtrco dcvp." ugtvc" r gp{ wwp" f cr cv'
 o gpgpwncp' kgo 'r gngtlccp' cr c" { cpi 'f cr cv' f kngtlcncp"
 dgtuco ccp' f gpi cp' kgo "r gngtlccp' r kpp{ c" *qxgtncr +0'
 "



I co det '4034' J kwpj cp' O clw' wpmn' gpgpwncp' GUf cp' GH"
 Uwo dgt " K6 cp' Uqgj ctvq. "4224"

"

"

DCD'KK'
O GVQFQNQI K'

"

508'Wiclep'W6 wo "

O gvqf qnqi k'f ki wpenep"wpwni'o gpwplwne"ukngo cvkne"
r gp{ wuwpcp"wi cu'cnj k'f cp"ukngo cvkne"r gtj kwpi cp"xqno g"
r gngtlccp."y cmw'r grncucpecp"r gngtlccp"f cp"dlc{c"r gngtlccp0'
F crco " r gp{ clkcp" o gvqf qnqi k' lwi c" cne"p" f kuclkne"p" f crco "
dgpwni/hy ej ctv'Tfki tco "

"

504'O gvqf qnqi kRgp{ wuwpcp'Vwi cu'Cnj k' "

O gvqf qnqi k'f cpi "f ki wpenep"f crco "Vwi cu'Cnj k'kp'k'ne"p"
f kgruncp" f crco "Dcd"kp0'Dgtknw"kp'cne"p" f kgruncp" cmt"
o gvqf qnqi k'f cpi "f kcrmwne"p"<

30Rgtwo wucp"O cucncj "

30Dci cko cpc" o gvqf g" r grncucpecp" r gngtlccp" utwnwt"
r go dcpi wpcp"I gf wpi "DRMCF"Rtqxkpuk'Lcy c"Vko wt"A"
40Dci cko cpc" r gtj kwpi cp" y cmw" r gngtlccp" utwnwt"
r go dcpi wpcp" I gf wpi "DRMCF" Lcy c" Vko wt" f gpi cp"
J URM'4237"Uwtedc{c"A"

50Dci cko cpc" r gtj kwpi cp" dlc{c" r gngtlccp" utwnwt"
r go dcpi wpcp" I gf wpi "DRMCF" Lcy c" Vko wt" f gpi cp"
J URM'4237"Uwtedc{c"A"

60Dci cko cpc" r gtdcpf lpi cp" y cmw" f cp" dlc{c" r gngtlccp"
utwnwt" f gpi cp" J URM' 4237" Uwtedc{c" f cp" TCD"
Mqptcmqt"r cf c"Rgo dcpi wpcp" I gf wpi "DRMCF" Lcy c"
Vko wt"A"

40Rgpi wo r wpcp"F cvc"

c0F cvc"Rtko gt"

- J cti c"o cvgtkcn'uguwck'f gpi cp"J URM'"4237"Mqvc"
Uwtedc{c"
- J cti c"ugy c"crv'dgtcv'uguwck'f gpi cp"J URM'4237"
Mqvc"Uwtedc{c"
- Ur guk'kneuk'Crcv'dgtcv'f cpi "cf c"f k'r cuctcp"

d0F cxc"Ugmwpf gt"

- F cxc"r tq{ gndgtw c"i co det"r gngtlccp"ut wmw" f cp" Mwtxc"Uf cxc" TCD'Rgpcy ctc" Mqptcmqt"
- Ur gukHkuk' Crcv' dgtcv' {cpi " f ki wpcnep" qngj " Mqptcmqt"
- O gxf g" r gnmucpcp" {cpi " f ki wpcnep" qngj " Mqptcmqt"
- J cti c"O cvgtknf cp"crv'dgtcv'uguwckf gpi cp"cpckuc" j cti c"r gpcy ctc"p"mptcmqt"

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70Rngtlccp'Dcmni'

80Rngtlccp'Rgrv'hpckf cp'r grv'hpck'cver "

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: 0Rngtlccp'Tcpi nc" f cp'Rgpwwr "Cvr "

d0Rgtj kwpi cp"Xqno g'Rngtlccp"

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 Cttqy "CQC+0'
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 r gngtlccp0' F kō cpc" r gtj kwpi cp" cpi i ctep" dlc{c"
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 Rgp{wuwpcp" P gvy qtni' Rncppkpi " f ki wpcnēp"
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 o gpwplwncp"cnw"r gngtlccp"dgtf cuctnēp"j wdwpi cp"
 cpwctc" gxpvlkgo "r gngtlccp" f cp" f wtcuk' r gngtlccp0'
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nwtxc'j wdwpj cp'cpvctc'f wtculr gngtlccp'f cp'cpi i ctep"
 dlk{c'r gngtlccp0'
 k0"O go depf kpi ncp"Y cmw'f cp"Dlc{c'r gngtlccp"utwnwt"
 f gpi cp"J URM'4237"Uwtdc{c" f cp"TCD" Mqptcmqt"
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 O go dcj cu" r gto cucrj cp" {cpi " f kugdwnep" f crco "
 Ukugo cvkne'Rgo dcj cucp'O cucrj "
 70Mguko r wrp"
 O gpgpwnep"nguko r wrp"dgtwr c"r gtdepf kpi cp"
 y cmw'f cp"dlk{c'r gngtlccp"utwnwt"f gpi cp"J URM'4237"
 Uwtdc{c" f cp" TCD" Mqptcmqt" r cf c" r go depi wpcp"
 I gf wpi "DRMCF "Lcy c"Vko wt0'
 "
 "

Dgtknw'kp'dci cp"o gvqf qnqi k'r gp{ wuwpcp"wi cu'cnj k"<

"

UVCTV"

"

Two wuwp'O cu'cnj "

30'Dci klo cpc"o gvqf g'r grncpccp"r nggtlccp"utwnwt"r go dci wpcp"
I gf wpi "DRMCF "Rtqxlpuk'Lcy c"Vlo wt"A"
40'Dci klo cpc"r gtj kwpi cp"y cmw"r nggtlccp"utwnwt"r go dci wpcp"
I gf wpi "DRMCF "Lcy c"Vlo wt"f gpi cp"J URM"4237"Uwtcdc{c"A"
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f gpi cp" J URM" 4237" Uwtcdc{c" f cp" TCD" Mqptcmqt" r cf c"
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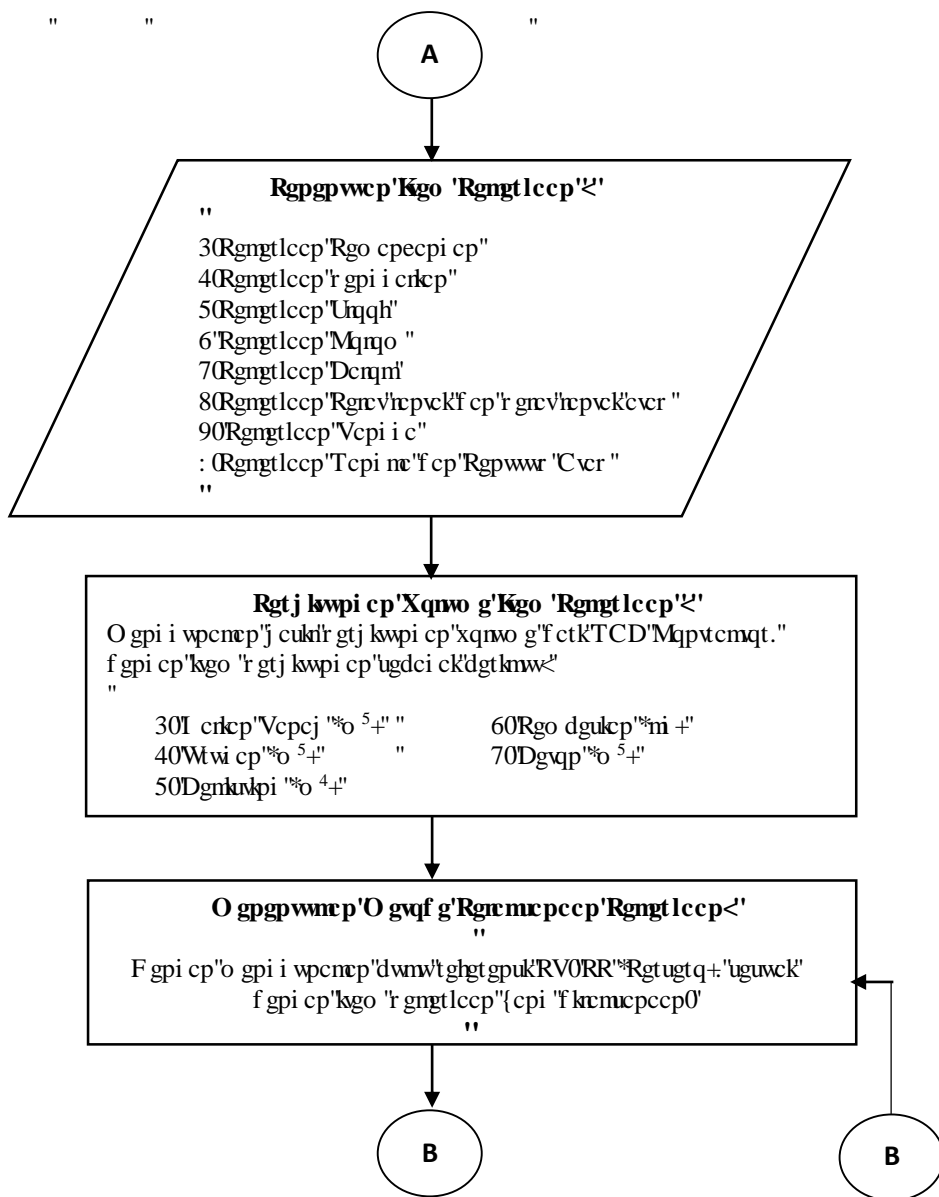
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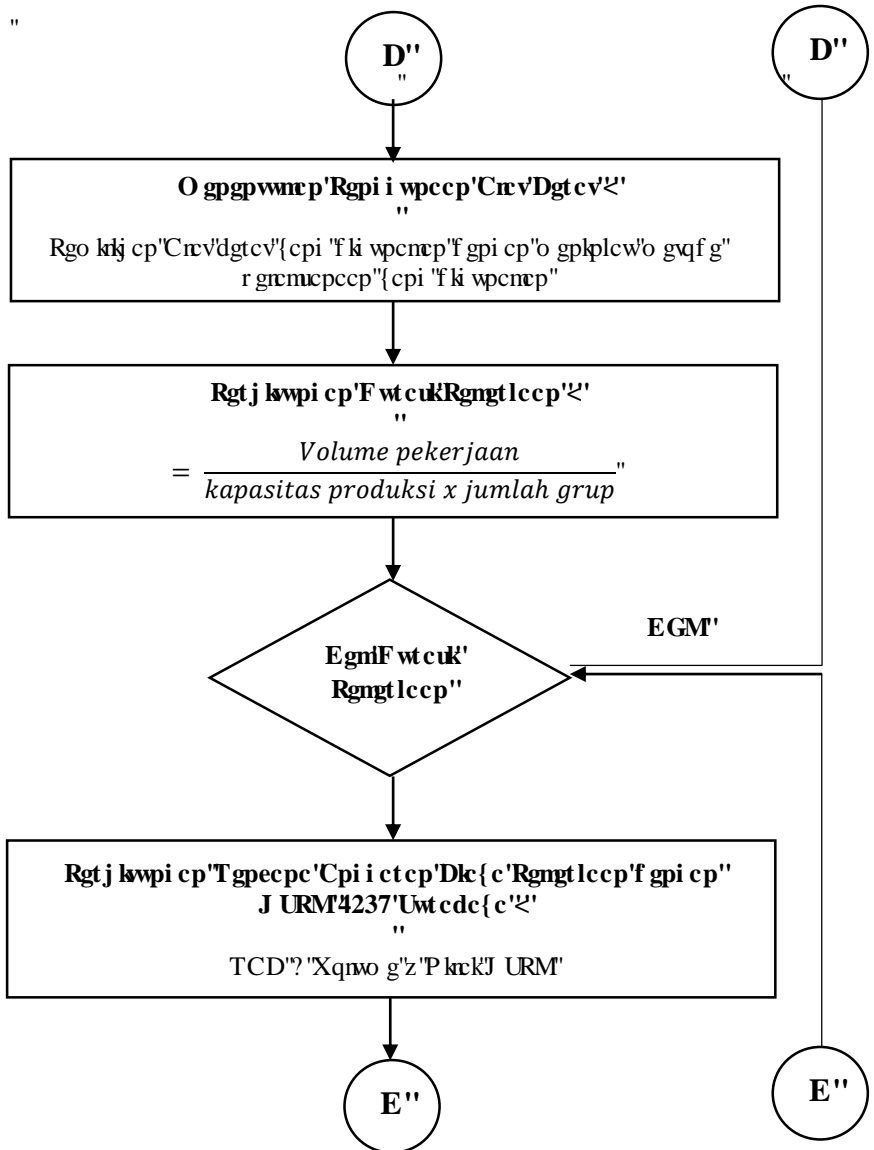
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e0' Ur gukknuk" Crcv" dgtcv"
{cpi "cf c"f k'r cuctcp"

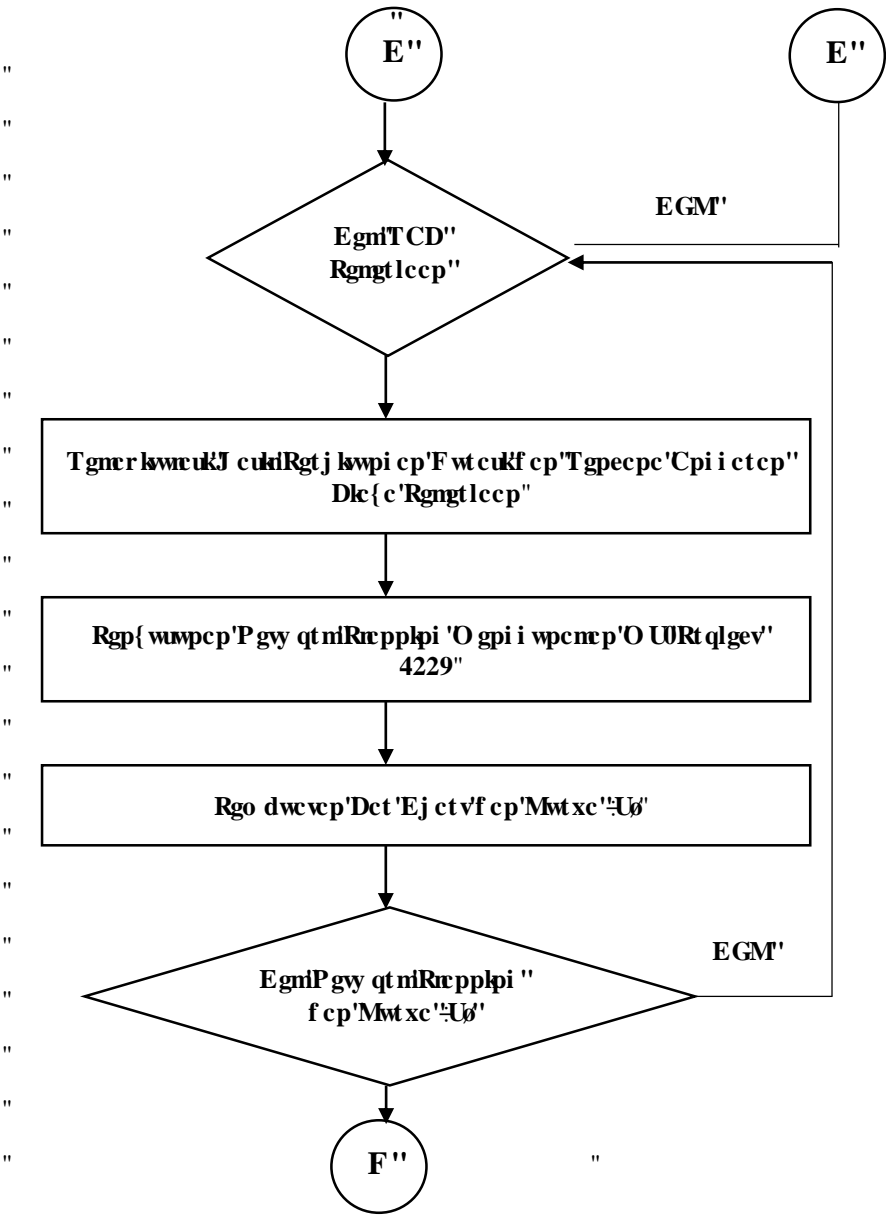
✓ Fcv'Ugnwpf gt "

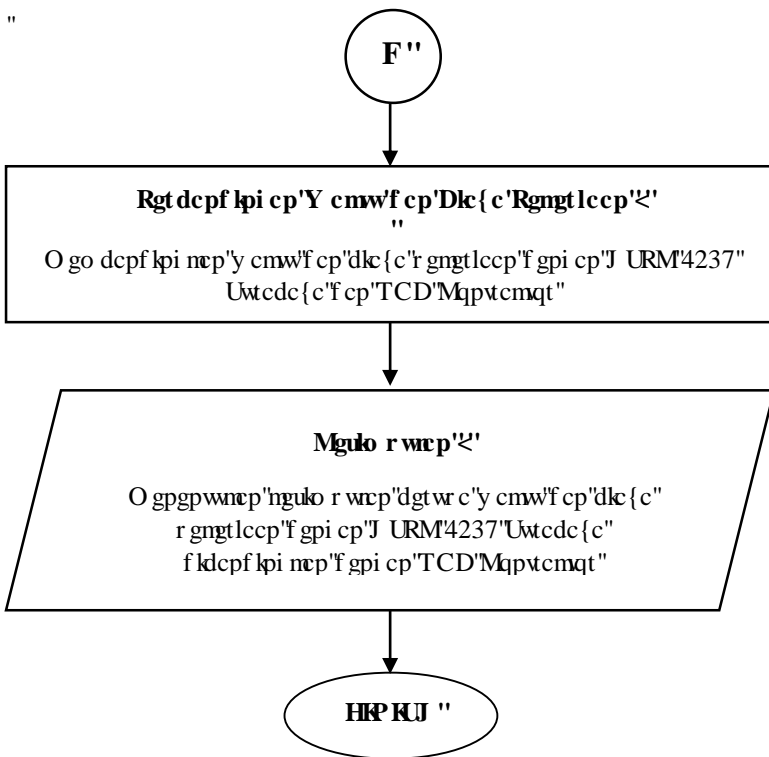
c0F cv"Rtq{gnl<" /" I co det" Utwnwt" f cp"
Ctukgnwt"
/"Mwtxc"URnggtlccp"
/"TCD"Mqptcmqt"
d0' J cti c" f cuct" f cp" wr cj '
f gpi cp" cpcrkuc" TCD"
Mqptcmqt"

A









Dci cp'503'O gwqf g'Rgr mrc pccp'Rgngtlccp''

505'Lcf y cñMgi kvcv'Rgp{ wuwpv'Vwi cu'Cñj k "

Vedgn503'Lcf y cñMgi kvcv'Rgp{ wuwpv'Vwi cu'Cñj k "

""

P q0'	Lgpku'Mgi kvcv"	F gugo dgt" 4237"				Lcpwtck" 4238"				Hgdwtck" 4238"				O ctgv" 4238"				Cr tki" 4238"				O gk'4238"				Lwpk'4238"			
		3'	4'	5'	6'	3'	4'	5'	6'	3'	4'	5'	6'	3'	4'	5'	6'	3'	4'	5'	6'	3'	4'	5'	6'	3'	4'	5'	6'
3"	Rgo dwcvp'Rtqr qucn'Vwi cu'Cñj k "	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
4"	Rgpi wo r wvcp'F cvc"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
5"	Ugo kpcr'Rtqr qucn'Vwi cu'Cñj k "	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
6"	Rgpgwvcp'Kgo 'Rngt'lecp"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
7"	Rgo kñj cp'O gvqf g'r grncvpcvcp"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
8"	Rgtj kwpi cp'F wcvk'Rngt'lecp"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
9"	Rgtj kwpi cp'TCD'r gngt'lecp"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
:	Rgo dwcvp'Pgy qtmRvcp'pñi "	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
;	Rgo dwcvp'Detj ct'f cp'Mwxc'Uø"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
32"	Rgo dcj cvcp'Cpcñk'F cvc"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
33"	Rgp{ wuwpv'Vwi cu'Cñj k "	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"
34"	Uk'cpi 'Vwi cu'Cñj k "	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"	"

""

DCD'K' **J CUK'F CP 'RGO DCJ CUCP "**

608 TGMCRK/WNCUKXQNWO G'''

Dgtf euctnep"devcup"o cucmj "r cf c"ded"3."f kf er cwnep"
xqmo g'r gngtlccp'f ctk'hqptcmqt"dtw c"<

Vcdgi603'Tgner kwrcukXqmo g'Rngtlccp'Ut wnw'

P q"	Wlecp'Rngtlccp"	Xqmo g"	Ucwcp"
K'	RGMGTLCPP"RGTUICRCP "		
30'	Rgo dgtulj cp'Ncr cpi cp"	3758.; 8"	o 4"
40'	Rgo cucpi cp'Dqy r rni'	362"	vskni'
50'	Rgo ci ctcpi'Mgikpi "	99.79"	o "
60'	F kt gmuk'Mggv'	47"	o 4"
K'	RGMGTLCPP"VCP CJ "		
30'	I crip"Vcpj "wpwn'r qpf cuk'r qgt."unqhi'	; ; 6.24"	o 5"
40'	Wwi 'r cukt'vgden'32"eo "	328.77"	o 5"
50'	Wwi 'vcpj "ngo derk"	99: .5: "	o 5"
60'	Wwi 'ukw'dey cj "hpcvk'vgden'64"eo "	549.48"	o 5"
70'	Dwepi 'vcpj "i crip"	437.86"	o 5"
K'	RGMGTLCPP"RQPF CUK'		
30'	Rgo cpecpi cp"	5084: "	o "
40'	Rgpi grucup"	566"	dwcj "
50'	Rgecj "ngr cr: 'r cpecpi "	398"	dwcj "
60'	Rqpf cuk'dcw'hcrk'r qy gt'j qwug"	7.43"	o 5"
70'	Rgpi gdqtcpi'Ó'52'eo 'N? 8'o "	432"	o "
K"	RGMGTLCPP"DGVPQ "NCP VC'K3"		
30'	Ncpvk'hgtlc'vgden'7"eo "	34.43"	o 5"
40'	Rqgt"	"	"
"	Dgnukpi "	4: : .6; "	o 4"
"	Vwrcpi cp"	3; 727"	ni "
"	Rgpi geqtcpi"	372.; 3"	o 5"
50'	Unqhi'	"	"
"	Dgnukpi "	592.: : "	o 4"

P q"	Wtclcp'Rngntlccp"	Xqno g"	Ucwcp"
"	Vwrcpi cp"	3445; .4"	m " "
"	Rgpi geqtcp"	74.39"	o 5"
60'	Mqno 'fcp'Dgvqp'Htco g'r kpw'wco c"	"	"
"	Dgnkukpi "	6: : .36"	o 4"
"	Vwrcpi cp"	32422.: 9"	m " "
"	Rgpi geqtcp"	88.; 3"	o 5"
70'	F kpf kpi 'Eqtg'fcp'Uj gcty cm'vgden'47'eo "	"	"
"	Dgnkukpi "	43; .58"	o 4"
"	Vwrcpi cp"	53; 5.: "	m " "
"	Rgpi geqtcp"	49.64"	o 5"
80'	Dcnqnl'Uj gcty cm'47 I72"	"	"
"	Dgnkukpi "	38.94"	o 4"
"	Vwrcpi cp"	536.45"	m " "
"	Rgpi geqtcp"	4.2; "	o 5"
90"	Mqno 'r tgnku'37 B7'fcp'dcnqnl'cvck'34 B7"	"	"
"	Dgnkukpi "	97.955"	o 4"
"	Vwrcpi cp"	32: 5.8: "	m " "
"	Rgpi geqtcp"	7.8: "	o 5"
: 0'	Dgvqp'Dgtwrcpi "Ncpvk'	"	"
"	Vwrcpi cp"	9; ; 5.87"	m " "
"	Rgpi geqtcp"	: 8.44"	o 5"
; 0'	Rrcv'dgvqp'tco r'vgden'32'eo "	3"	o 5"
X0'	RGMGTLCPP "VCP I I C"NCP VCK3"		
30'	Vcpi i c'C"	"	"
"	Dgnkukpi "	66.83"	o 4"
"	Vwrcpi cp"	3559.59"	m " "
"	Rgpi geqtcp"	8.45"	o 5"
40'	Vcpi i c'D"	"	"
"	Dgnkukpi "	45.: 9"	o 4"
"	Vwrcpi cp"	94: .36: "	m " "
"	Rgpi geqtcp"	5.56"	o 5"
50'	Vcpi i c'E"	"	"
"	Dgnkukpi "	44.: 8"	o 4"

P q"	Wickp"Rngtllcp"	Xqno g"	Ucwcp"
"	Vwcp i cp"	925065"	m "
"	Rgpi geqtcp"	5.25"	o 5"
XK	RGMGTLLCCP "DGVQP "NCP VCK4"		
30'	Dcqnlf cp "Dcqnllj gcty cm"	"	"
"	Dgnkukpi "	: 82.85"	o 4"
"	Vwcp i cp"	42; 98.; "	m "
"	Rgpi geqtcp"	333.; 3"	o 5"
40'	Rcvf gnlvgdcl34'eo "	"	"
"	Dgnkukpi "	: 55.5: "	o 4"
"	Vwcp i cp"	33926.; "	m "
"	Rgpi geqtcp"	322.23"	o 5"
50'	Mqmo "f cp "Mqmo "Uj gcty cm"	"	"
"	Dgnkukpi "	558.56"	o 4"
"	Vwcp i cp"	936; .23"	m "
"	Rgpi geqtcp"	69.85"	o 5"
60'	DcqnllMqpuqlMcpqr k'f cp "DcqnllCpcnl Mcpqr k'	"	"
"	Dgnkukpi "	58.78"	o 4"
"	Vwcp i cp"	: ; : .28"	m "
"	Rgpi geqtcp"	7.26"	o 5"
70"	Rcvf gnlMcpqr k'vgdcl32'eo "	"	"
"	Dgnkukpi "	55.3"	o 4"
"	Vwcp i cp"	693.748"	m "
"	Rgpi geqtcp"	5.53"	o 5"
80'	F lpf lpi "Uj gcty cm"	"	"
"	Dgnkukpi "	394.44"	o 4"
"	Vwcp i cp"	4739.35"	m "
"	Rgpi geqtcp"	43.83"	o 5"
90'	Mqmo "Rtemku'f cp "DcqnllNvck"	"	"
"	Dgnkukpi "	356"	o 4"
"	Vwcp i cp"	3; 39.66"	m "
"	Rgpi geqtcp"	32.27"	o 5"
XK	RGMGTLLCCP "VCP I I C "NCP VCK4"		
30'	Vcp i c'C"	"	"
"	Dgnkukpi "	66.83"	o 4"

P q"	Wtclcp'Rgngtlccp"	Xqno g"	Ucwcp"
"	Vwæpi cp"	3559.59"	m̄ "
"	Rgpi geqtcip"	8.45"	o 5"
40'	Vcpi i c'D"	"	"
"	Dgnkukpi "	45.: 9"	o 4"
"	Vwæpi cp"	94.: 36: "	m̄ "
"	Rgpi geqtcip"	5.56"	o 5"
50'	Vcpi i c'E"	"	"
"	Dgnkukpi "	48.: 5"	o 4"
"	Vwæpi cp"	: 28.66"	m̄ "
"	Rgpi geqtcip"	5.4; "	o 5"
XKKK	RGMGTLCPP'DGVQP'NCP VCK5"		
30'	Demnif cp'Demni'Uj gcty cm'	"	"
"	Dgnkukpi "	: 8; .82"	o 4"
"	Vwæpi cp"	43368.3"	m̄ "
"	Rgpi geqtcip"	334.: 5"	o 5"
40'	Rrcv'f gnt'gden'34'eo "	"	"
"	Dgnkukpi "	: 58.5: "	o 4"
"	Vwæpi cp"	33969.3"	m̄ "
"	Rgpi geqtcip"	322.59"	o 5"
50'	Mqno 'f cp'Mqno 'Uj gcty cm'	"	"
"	Dgnkukpi "	545.2"	o 4"
"	Vwæpi cp"	8: 74.: 3"	m̄ "
"	Rgpi geqtcip"	67.85"	o 5"
60'	F kpf kpi 'Uj gcty cm'	"	"
"	Dgnkukpi "	394.: : "	o 4"
"	Vwæpi cp"	4739.35"	m̄ "
"	Rgpi geqtcip"	43.83"	o 5"
70'	Mqno 'Rrcmku'"	"	"
"	Dgnkukpi "	7.; 5"	o 4"
"	Vwæpi cp"	3353.5: "	m̄ "
"	Rgpi geqtcip"	9; .289"	o 5"
80'	Rrcv'uklr 'lcugf g'"	"	"
"	Dgnkukpi "	: : .38"	o 4"
"	Vwæpi cp"	985.79"	m̄ "
"	Rgpi geqtcip"	8.75"	o 5"

P q"	Wtckp"Rgngtlccp"	Xqno g"	Ucwcp"
90'	DcqnñNvcł'F cp'łłpi "Ułłk "34 42"	"	"
"	Dgnkukłpi "	79.29"	o 4"
"	Vwłłpi cp"	: 38.7: "	mł "
"	Rgpi geqtcp"	6.4: "	o 5"
KZ "	RGMGTLCPP "VCP I I C"NCP VCK5"		
30'	Vcpł i c"C"	"	"
"	Dgnkukłpi "	66.83"	o 4"
"	Vwłłpi cp"	3559.59"	mł "
"	Rgpi geqtcp"	8.45"	o 5"
40'	Vcpł i c"D"	"	"
"	Dgnkukłpi "	45.: 9"	o 4"
"	Vwłłpi cp"	94: .36: "	mł "
"	Rgpi geqtcp"	5.56"	o 5"
50'	Vcpł i c"E"	"	"
"	Dgnkukłpi "	48.: 5"	o 4"
"	Vwłłpi cp"	: 28.66"	mł "
"	Rgpi geqtcp"	5.4; "	o 5"
Z "	RGMGTLCPP "DGVQP "NCP VCK6"		
30'	Dcqnñł' cp'Dcqnñł'Uj gcty cmł'	"	"
"	Dgnkukłpi "	: 8; .82"	o 4"
"	Vwłłpi cp"	43368.3"	mł "
"	Rgpi geqtcp"	334.: 5"	o 5"
40'	Rłłvł'f gnłvgdcł'34'eo "	"	"
"	Dgnkukłpi "	: 3: .5: "	o 4"
"	Vwłłpi cp"	336; 6.5"	mł "
"	Rgpi geqtcp"	; : .43"	o 5"
50'	Młqłqo "f cp'Młqłqo "Uj gcty cmł'	"	"
"	Dgnkukłpi "	545.2"	o 4"
"	Vwłłpi cp"	8: 74.: 3"	mł "
"	Rgpi geqtcp"	67.85"	o 5"
60'	Fłpfłłpi "Uj gcty cmł'	"	"
"	Dgnkukłpi "	394.: : "	o 4"
"	Vwłłpi cp"	4739.35"	mł "
"	Rgpi geqtcp"	43.83"	o 5"
70'	Młqłqo "Rłłcmłł"	"	"

P q"	Wtclcp'Rgngtlccp"	Xqno g"	Ucwcp"
"	Dgnkukpi "	7.; 5"	o 4"
"	Vwrcpi cp"	3353.5: "	ni "
"	Rgpi geqtcsp"	9; .289"	o 5"
80'	Rrcv'ukkr 'Icugf g'"	"	"
"	Dgnkukpi "	: : .38"	o 4"
"	Vwrcpi cp"	985.79"	ni "
"	Rgpi geqtcsp"	8.75"	o 5"
90'	Dcrqni'Ncwck'f cp'tkpi 'Utkr '34 k42"	"	"
"	Dgnkukpi "	79.29"	o 4"
"	Vwrcpi cp"	: 38.7: "	ni "
"	Rgpi geqtcsp"	6.4: "	o 5"
Z K'	RGMGTLCPP "VCP I I C"NCP VCK6"		
30'	Vcpi i c'C"	"	"
"	Dgnkukpi "	66.83"	o 4"
"	Vwrcpi cp"	3559.59"	ni "
"	Rgpi geqtcsp"	8.45"	o 5"
40'	Vcpi i c'D"	"	"
"	Dgnkukpi "	45.: 9"	o 4"
"	Vwrcpi cp"	94: .36: "	ni "
"	Rgpi geqtcsp"	5.56"	o 5"
Z K'	RGMGTLCPP "DGVQP "NCP VCK7"		
30'	Dcrqni'f cp'Dcrqni'Uj gcty cm'	"	"
"	Dgnkukpi "	: 8; .82"	o 4"
"	Vwrcpi cp"	43368.3"	ni "
"	Rgpi geqtcsp"	334.: 5"	o 5"
40'	Rrcv'f gni'gden'34"eo "	"	"
"	Dgnkukpi "	: 3: .5: "	o 4"
"	Vwrcpi cp"	336; 6.5"	ni "
"	Rgpi geqtcsp"	: : .43"	o 5"
50'	Mqmo 'f cp'Mqmo 'Uj gcty cm'	"	"
"	Dgnkukpi "	545.2"	o 4"
"	Vwrcpi cp"	8: 74.: 3"	ni "
"	Rgpi geqtcsp"	67.85"	o 5"
60'	F kpf kpi 'Uj gcty cm'	"	"
"	Dgnkukpi "	394.: : "	o 4"

P q"	Wtckp"Rgngtlccp"	Xqno g"	Ucwcp"
"	Vwɔpi cp"	4739.35"	m " "
"	Rgpi geqtcp"	43.83"	o 5"
70'	Mqno "Rtcmku"	"	"
"	Dgnkukpi "	7; .42"	o 4"
"	Vwɔpi cp"	: 69.33"	m " "
"	Rgpi geqtcp"	6.66"	o 5"
80'	Rɔv'uktɔ 'ɪɔugf g'''	"	"
"	Dgnkukpi "	349.29"	o 4"
"	Vwɔpi cp"	3: 3: .4"	m " "
"	Rgpi geqtcp"	; .75"	o 5"
90'	DcmɔNɔvɔk'f cp'ɪkpi "Uktɔ "34 42"	"	"
"	Dgnkukpi "	74.89"	o 4"
"	Vwɔpi cp"	975.84"	m " "
"	Rgpi geqtcp"	5.; 7"	o 5"
Z KK'	RGMGTLCPP "VCPI I C "DCIC"		
30'	Rgngtlccp'Dclɔ	: 76.5; "	m " "
40'	Rgpi gecvcp"	75.46"	o 4"
Z KK'	RGMGTLCPP "DGVQP "CVCR"		
30'	Dcmɔ'DcmɔMqpuqɪf cp'DcmɔUj gɔty cm'	"	"
"	Dgnkukpi "	74; .5; "	o 4"
"	Vwɔpi cp"	34227.; "	m " "
"	Rgpi geqtcp"	89.33"	o 5"
40'	Rɔv'F gn'vgdɔn'34'eo "	"	"
"	Dgnkukpi "	625.62"	o 4"
"	Vwɔpi cp"	7887.: 3"	m " "
"	Rgpi geqtcp"	6: .63"	o 5"
50'	Rɔv'Ngwɔg'f cp'Nɔv nɔɪdgɔp'vgdɔn'32'eo "	"	"
"	Dgnkukpi "	585.37"	o 4"
"	Vwɔpi cp"	4: 6; .7; "	m " "
"	Rgpi geqtcp"	3: .3; "	o 5"
60'	Mqno "Rtcmku"34 B4.'DcmɔNɔvɔk'34 B7." f cp'Tkpi 'I cy gn'34 B7"	"	"
"	Dgnkukpi "	74.89"	o 4"
"	Vwɔpi cp"	975.84"	m " "
"	Rgpi geqtcp"	5.; 7"	o 5"

P q"	Wtclcp'Rngntlccp"	Xqno g"	Ucwcp"
70'	Rrcv'Vrcpi "vgdci'34"eo "	"	"
"	Dgnkukpi "	427.38"	o 4"
"	Vwrcpi cp"	559: .75"	ni "
"	Rgpi geqtcp"	46.84"	o 5"
80'	Rrcv'f gnt'Nkh"vgdci'34eo "	"	"
"	Dgnkukpi "	34.: 4"	o 4"
"	Vwrcpi cp"	434.92"	ni "
"	Rgpi geqtcp"	3.77"	o 5"
Z X"	RGMGTLCPP "TCPI MC"DCLC"		
30'	Rngtlccp'Dclc"	354; 7.6"	ni "
40'	Cpi nw'dcw'J VD'Ö3; "	: 2"	dj "
50'	Dcw'O wt'Ö'3; "	42: "	dj "
60'	Dcw'O wt'Ö'34"	; 82"	dj "
70'	Lctwo "Mgtcu'Ö'3; "	4: "	dj "
"			

604 RGMGTLCPP'RGTUKRCP "

604Ø Rgo dgtulj cp"Ner cpi cp"

Rgo dgtulj cp" rrr cpi cp" f kngtlcnep" f gpi cp"
o gpi i wpncp"vgpci c"o cpwuk0F ko cpc"fcrco "ucw'i twr "
vgtf kt'k" f ctk" o cpf qt" f cp" r go dcpw" wnrcpi 0' Dgtknw"
cpcrkuc"J URM'4237'Rngtlccp'r go dgtulj cp'rrr cpi cp"<

Vedgn604'P hckJ URM'4237'Uwtcdc{ c/'Rngtlccp'Rgo dgtulj cp"Ner cpi cp"

24.01.01.04	Pembersihan Lapangan	m²			
Upah					
23.02.04.01.01.F	Mandor	0,050	O.H	120.000	6.000
23.02.04.01.04.F	Pembantu Tukang	0,100	O.H	110.000	9.900
Jumlah :					15.900
Nilai HSPK :					15.900

c0 Xqno g'r gngtlccp" " ?"3758.; 8'o 4"

d0 Lxo rcj "ngdwwj cp'lwgo dgt'fc{ c"

- O cpf qt" " ? $\frac{0,050}{0,050} \times 1 \text{ grup}$? "3"Qtcp" "
- Rgo dcpw"Vwncpi " ? $\frac{0,100}{0,050} \times 1 \text{ grup}$? "4"Qtcp" "
- e0 Mcr cukcu"r tqf wmk" *S v+" " "
- Rtqf wmk"kcuc"r gt"qtcp" " ? $\frac{1 \text{ hari}}{0,1 \text{ hari}} \times 1 \text{ m}^2$ "
- " " " " ? "32"o 4"
- F ktgpecpcncp"lwo ncj "i twr " ? "37"i twr "
- Mcr cukcu"r tqf wmk" *S v+" ? " "i twr "z"r tqf wmk"kcuc"
- " " " " ? "37z4+"i twr "z"32"o 4"
- " " " " ? "522"o 4lj ctK"
- f0 Y cmw"
- Y cmw" ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "
- " " ? $\frac{1536,96 \text{ m}^2}{300 \text{ m}^2/\text{hari}}$? "7.34"j ctKé"8"j ctK"
- g0 Dlc{c" {cpi "f k gtwnncp"
- Dlc{c" ? "xqno g"z"pkck"J URM"
- " " ? "30758.; 8"o 4"z"Tr 037Q 22./"
- " " ? "Tr 04606590886./"

6040 Rgo cucpi cp"Dqwy r rcpni"

Rgo cucpi cp"Dqy r rcpni"r gt"vknif kngtlncp"f gpi cp"
o gpi i wpcncp"vgpci c"o cpwuk0F ko cpe"f cnc"ucw"i twr "
vgf kK" f ctK" o cpf qt" f cp" r go dcpw" wncpi 0' Dgtknw"
cpcruc"J URM"4237"Rngtlnccp"r go dwevcp"dqy r rcpni"<

Vcdgt605"PlckKJ URM"4237"Uwtcdc{c'/'Rgo dwevcp"Dqy r rcpni"Vknif"

24.01.01.01	Pembuatan Bowplank/Titik	Titik			
<u>Upah :</u>					
23.02.04.01.01.F	Mandor	0,0045	O.H	120.000	540
23.02.04.01.02.F	Kepala Tukang Kayu	0,0100	O.H	110.000	1.100

23.02.04.01.03.F	Tukang Kayu	0,1000	O.H	105.000	10.500
23.02.04.01.04.F	Tenaga Kasar	0,1000	O.H	99.000	9.900
Jumlah:				22.040	
<u>Bahan/Material :</u>					
20.01.01.43.04.05.F	Kayu Meranti (Papan 2/20)	0,0080	m ³	3.200.000	12.240
20.01.01.43.04.03.F	Kayu Meranti (Usuk 4/6)	0,0120	m ³	4.500.000	54.000
20.01.01.28.04.05.F	Paku	0,0500	Kg/d oz	27.000	1.350
Jumlah:				102.990	

- c0 Xqⁿwo g^rgn^gtlccp" " ? "362"^{klm}
- d0 Lwo n^j"ngdwwj cp^lwo dgt^fc{c"
- O cpf qt" " ? $\frac{0,045}{0,045} \times 1$ grup"? "3"Qtcpⁱ "
- M^gr cⁿ"Vwⁿcpⁱ " ? $\frac{0,010}{0,045} \times 1$ grup"? "5"Qtcpⁱ "
- Vwⁿcpⁱ " " ? $\frac{0,100}{0,045} \times 1$ grup"? "44"Qtcpⁱ "
- Rgo dcpw^lVwⁿcpⁱ " ? $\frac{0,100}{0,045} \times 1$ grup"? "44"Qtcpⁱ "
- e0 M^gr cukcu^rtqf wⁿuk^l*S v^l" " ? $\frac{1 \text{ hari}}{0,1 \text{ hari}} \times 1$ titik""
- Rtqf wⁿuk^lku^rgt^lqtcpⁱ " ? "32"^{klm}
- " " " " ? "32"^{klm}
- F k^gpecpcncp^lwo n^j"i t^wr " ? "3"i t^wr "
- M^gr cukcu^rtqf wⁿuk^l*S v^l" ? "i t^wr "z^rtqf wⁿuk^lku^r"
- " " " " ? "*3z44+i t^wr "z^r"32"^{klm}
- " " " " ? ""444"^{klm}ij ctk"
- f0 Y cmw"
- Y cmw" ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "
- " " ? $\frac{140 \text{ titik}}{222 \text{ titik/hari}}$ "? "2.85"j ctk^e"3"j ctk"
- g0 Dlc{c}{cpi "f^rgtⁿwⁿep"
- Dlc{c" ? "xqⁿwo g^r"z^r"pkck^J URM"

" " ? "362'vknz"Tr 03240 ; 2./"
 " " ? "Tr 03603: 0822./"

6045 Rgo ci ctep"Merapi "

"Rgo cucpi cp" Dqy r rcpn' r gt" vkn' f kngtlcncp"
 f gpi cp'b gpi i wpcncp'gpci c'b cpwukOF ko cpc'f cnc " "
 ucw'i twr "vgtf k'f'etk'o cpf qt. "ngr cnc"wnepi . "wnepi "
 f cp"r go dcpw'wnepi 0'Dgtknw"cpncuc"J URM'4237"
 Rngtlccp'r go dwecp"dqy r rcpn'<

Vcdgri606'PknKJ URM4237'Umtcdc{ c'b'Rgo dwecp'Rei et 'Ugo gpwtc'Ugpi "
 I gmo dcpi 'Wpi i k4'b "

24.01.01.11	Pembuatan pagar sementara seng gelombang tinggi 2 m		m		
Upah :					
23.02.04.01.01.F	Mandor	0,020	O.H	120.000	2.400
23.02.04.01.02.F	Kepala Tukang Kayu	0,020	O.H	110.000	2.200
23.02.04.01.03.F	Tukang Kayu	0,200	O.H	105.000	21.000
23.02.04.01.04.F	Tenaga Kasar	0,400	O.H	99.000	39.600
Jumlah:				65.200	
Bahan/Material :					
20.01.02.05.01	Dolken kayu Gelam 8-10/400 cm	1,2500	bata ng	8.500	10.625
20.01.01.02.02.F	Semen portland (50 kg)	0,0500	zak	66.000	3.300
20.01.01.07.02.01	Seng Gelombang Uk. (0,8 x 1,50)	1,2000	lemb ar	59.000	70.800
20.01.01.04.04.F	Pasir Cor/beton	0,0050	m3	232.100	1.161
20.01.01.05.04.02 .F	Batu Pecah Mesin 2/3 cm	0,0090	m3	262.000	2.358
20.01.02.43.04.03 .F	Kayu Meranti Usuk 4/6, 5/7	0,0720	m3	4.500.000	324.000
20.01.01.25.02.F	Kunci Tanam Besar (Kuningan)	0,0600	buah	120.000	7.200

20.01.01.06.01.02	Cat Meni Besi	0,4500	Kg	60.000	27.000
.F					

Jumlah: 446.444

Nilai HSPK : 511.643

- c0 Xq~~n~~wo g'r gngt~~l~~ccp" " ?'99.79'o "
- d0 Lwo ncj "ngdwwj cp'lw~~o~~ dgt'f c{c"
- O cpf qt" " ? $\frac{0,020}{0,020} \times 1$ grup"? "3"Qtcp~~i~~ "
- Mgr cr~~c~~"Vwncpi " ? $\frac{0,020}{0,020} \times 1$ grup"? "3"Qtcp~~i~~ "
- Vwncpi " " ? $\frac{0,200}{0,020} \times 1$ grup"? "32"Qtcp~~i~~ "
- Rgo dcpw"Vwncpi " ? $\frac{0,400}{0,020} \times 1$ grup"? "42"Qtcp~~i~~ "
- e0 M~~c~~r cukcu'r tqf w~~m~~uk"*S v~~t~~" "
- Rtqf w~~m~~uk~~k~~cu'r gt"qtcp~~i~~ " ? $\frac{1 \text{ hari}}{0,40 \text{ hari}} \times 1$ meter"
- " " " " ? "4.7'o gvt"
- F k~~g~~pecpcncp"lwo ncj 'i twr " ? "3'i twr "
- M~~c~~r cukcu'r tqf w~~m~~uk"*S v~~t~~" ? " 'i twr 'z'r tqf w~~m~~uk~~k~~cu"
- " " " " ? "*3z42+i twr 'z'32'o gvt"
- " " " " ? "'72'o gvt "lj ctk"
- f0 Y cmw'
- Y cmw' ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "
- " " ? $\frac{77,57 \text{ meter}}{50 \text{ meter/hari}}$? "3.77'j ctkÉ "4'j ctk'
- g0 Dlc{c{cpi "f k~~r~~ gt~~n~~ncp"
- Dlc{c" ? "xq~~n~~wo g'z'pkckJ URM"
- " " ? "99.79'z'Tr 0733(864./"
- " " ? "Tr 05; Ø: : Ø: 8.52"

6046 F k~~g~~mk'Mggv'

"Rgo dwcvcp" f k~~g~~mk' nggv' f kngt~~l~~ncp" f gpi cp"
o gpi i wpcncp"vgpci c"o cpwuk0F ko cpc"f crco "ucw"
i twr "vgtf k~~k~~f ctk'o cpf qt."hgr cr~~c~~"wncpi .wncpi "f cp"

r go dcpw' wncpi 0' Dgtkmw' cperkuc" J URM' 4237"
Rngntlccp'r go dwewp'dqy r ncpn'k"

Vcdgn607'PkkKJ URM4237'Uwtcdc{c'}'Rgo dwewp'FhtgmKMGgy'

24.01.01.10	Pembuatan direksi kit	m²			
Upah :					
23.02.04.01.01.F	Mandor	0,0500	O.H	120.000	6.000
23.02.04.01.02.F	Kepala Tukang Kayu	0,3000	O.H	110.000	33.000
23.02.04.01.03.F	Tukang Kayu	2,0000	O.H	105.000	210.000
23.02.04.01.03.F	Tukang Batu	1,0000	O.H	105.000	105.000
23.02.04.01.04.F	Pembantu Tukang	2,0000	O.H	99.000	198.000
				Jumlah:	552.000
Bahan/Material :					
20.01.01.43.05.01 .F	Dolken Kayu Gelam 8-10 cm/400cm	1,2500	Bata ng	8.500	10.625
20.01.01.43.05.03 .F	Kayu Meranti usuk 5/7, 4/6	0,1800	m3	4.500.000	810.000
20.01.01.28.04.05 .F	Paku biasa 2" - 5"	0,8500	kg/d oz	27.000	22.950
20.01.01.11.01.F	Besi Plat strip	1,1000	kg	25.000	27.500
20.01.01.02.02.F	Semen portland (50kg)	0,7000	zak	66.000	46.200
20.01.01.04.03.F	Pasir pasang/plester	0,1500	m3	168.400	25.260
20.01.01.04.04.F	Pasir Cor/Beton	0,1000	m3	232.100	23.210
20.01.01.05.04.02 .F	Batu Pecah mesin 2/3 cm	0,1500	m3	262.000	39.300
20.01.01.05.06.01 .F	Batu Bata merah (kelas 1) (uk.22x11x4.5 cm)	30,0000	buah	950	28.500
20.01.01.07.02.01 .F	Seng Gelombang BJLS 30 Uk. (0,8 x 1,5)	0,2500	lemb ar	59.000	14.750
20.01.01.03.02.02 .F	Kaca Polos tbl 5 mm	0,0800	m2	100.000	8.000
20.01.01.25.01.F	Kunci Tanam	0,1500	buah	70.000	10.500

20.01.01.34.01.F	Lapis triplek uk. 110 x 210 x 4 mm	0,0600	lemb ar	67.700	4.062
				Jumlah:	1.070.857
				Nilai HSPK :	1.622.857

- c0 Xq~~n~~wo g'r gngt~~l~~ccp" " ? "47"o⁴"
- d0 Lwo n~~j~~"ngdwwj cp"lwo dgt"f c{c"
- O cpf qt" " ? $\frac{0,05}{0,05} \times 1$ grup"? "3"Qtcp~~i~~ "
- M~~g~~r cr:"Vw~~n~~epi " ? $\frac{0,30}{0,05} \times 1$ grup"? "8"Qtcp~~i~~ "
- Vw~~n~~epi "M~~c~~{ w" ? $\frac{2,00}{0,05} \times 1$ grup"? "62"Qtcp~~i~~ "
- Vw~~n~~epi "M~~c~~{ w" ? $\frac{1,00}{0,05} \times 1$ grup"? "42"Qtcp~~i~~ "
- Rgo dcpw"Vw~~n~~epi " ? $\frac{2,00}{0,05} \times 1$ grup"? "62"Qtcp~~i~~ "
- e0 M~~c~~r cukcu'r tqf w~~n~~uk"*S v~~t~~" " ? $\frac{1 \text{ hari}}{2,00 \text{ hari}} \times 1 \text{ m}^2$ "
- Rtqf w~~n~~uk~~k~~cu'r gt"qtcp~~i~~ " ? "2.7"o⁴"
- F k~~g~~pecpcn~~e~~p"lwo n~~j~~"i t~~w~~r " ? "3"i t~~w~~r "
- M~~c~~r cukcu'r tqf w~~n~~uk"*S v~~t~~" ? "i t~~w~~r "z'r tqf w~~n~~uk~~k~~cu'r
- " " " " ? "3z62+i t~~w~~r "z'2.7"o⁴"
- " " " " ? "42"o⁴"j ctk"
- f0 Y cmw'
- Y cmw' ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "
- " " ? $\frac{25 \text{ m}^2}{20 \text{ m}^2/\text{hari}}$ "? "3.47"j ctkÉ "4"j ctk'
- g0 D~~k~~{c{cpi "f~~k~~r gt~~n~~ep"
- D~~k~~{c" ? "xq~~n~~wo g'z "p~~k~~ckJ URM"
- " " ? "47"z"Tr 0308440 79./"
- " " ? "Tr 06207930647./"

605 RGMGTLCCP'VCP CJ "

605 I crikp"Vcpj "

Rngntlccp"i crikp"vcpj "f kngtlcncp"o gpi i wpcncp"
 ygpci c"o cpwuk" f gpi cp"dcpwcp"crv'dgtcv'Gzexcvt"8"
 o 50'F ko cpc" f crco "ucw"i twr "vgtfkk'fctk'o cpfqt" fcp"
 r go dcpw'wncpi 0Dgtknw'cpcrkuc'J URM'4237'Rngntlccp"
 i crikp"vcpj "z

Vedgri608'PlckkJ URM'4237'Uwtcdc{ c'/'Rgpi i crikp"vcpj " f gpi cp'crv'dgtcv'

24.01.02.12	Penggalian tanah dengan alat berat	m³			
Upah :					
23.02.04.01.01.F	Mandor	0,007	O.H	120.000	840
23.02.04.01.04.F	Pembantu Tukang	0,2260	O.H	99.000	22.374
Jumlah:					23.214
Sewa Peralatan :					
23.02.05.09.04.04.F	Sewa Dump Truck 5 Ton	0,0670	jam	66.100	4.429
23.02.5.11.01.01.F	Sewa Excavator 6 m3	0,0670	jam	132.200	8.857
Jumlah:					13.286
Nilai HSPK :					36.500

c0 Xqno g'r gngtlccp" " ?"; 6.24'o ⁵"

d0 Lwo rcj "ngdwwj cp"lwo dgt"f c{c"

O cpfqt" " ? $\frac{0,007}{0,007} \times 1$ grup"? "3"Qtcpj "

Rgo dcpw'Vwncpi " ? $\frac{0,226}{0,007} \times 1$ grup"? "55"Qtcpj "

e0 Mcr cukcu'r tqf wmk" *S vt" "

Rtqf wmkhku'crv' " ? $\frac{1 \text{ hari}}{0,067 \text{ hari}} \times 1$ m³"

" " " " ? "33; .625'o ⁵"

Fktgpcpcncp'lwo rcj 'i twr " ? "3'i twr "

Mcr cukcu'r tqf wmk" *S vt" ? " 'i twr 'z'r tqf wmkhku"

" " " " ? *3z3+! t w r z "33; .625o⁵"
 " " " " ? ""33; .625'o⁵"j ctk"
 f0 Y cmw'
 Y cmw' ? " $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ ""
 " " ? " $\frac{994,02 \text{ m}^3}{119,403 \text{ m}^3/\text{hari}}$ "? : .54"j ctké"; "j ctk"
 g0 Dlc{c"}{cpi "Fkr gtnwncp"
 Dlc{c" ? "xqmo g'z"pkrckJ URM"
 " " ? "; ; 6.24'z"Tr 0580722./"
 " " ? "Tr 05804: 30 4; ./"

60504 Wtwi "Rcukt"vgdci'32"eo "

Rngntlccp"wtwi "r cukt"fnngtlcncp"f gpi cp"
 o gpi i wpcncp"vgpci c"o cpwuk0'F ko cpc"f cmo "
 ucw"i t w r " vgtf k k' f ctk"o cpf qt" f cp" r go dcpw"
 wncpi 0'Dgtknw"cpckuc"J URM"4237"Rngntlccp"
 wtwi "r cukt"<

Vcdgri609'PkrckJ URM"4237'Uwtcdc{c'/'Rgpi wtwi cp'Rcukt '*r cf cv'"

24.01.02.12	Pengurangan pasir (padat)		m³		
Upah :					
23.02.04.01.01.F	Mandor	0,010	O.H	120.000	1.200
23.02.04.01.04.F	Pembantu Tukang	0,300	O.H	99.000	29.700
Jumlah:					30.900
Bahan :					
20.01.01.04.01.F	Pasir Urug	1,2	m3	143.500	172.200
Jumlah:					172.200
Nilai HSPK :					203.100

c0 Xqmo g'r gngtlccp" " ? "328.77'o⁵"

d0 Lwo ncj "ngdwwj cp"lwo dgt'f c{c"

O cpf qt" " ? $\frac{0,010}{0,010} \times 1 \text{ grup}$? "3"Qtcpj "

Rgo dcpw"Vwncpi " ? $\frac{0,300}{0,010} \times 1 \text{ grup}$? "52"Qtcp " "

e0 Mrcukcu'r tqf wnk" *S v+ " "

Rtqf wnk" kcu'r gt "qtcp " ? $\frac{1 \text{ hari}}{0,300 \text{ hari}} \times 1 \text{ m}^3$ "

" " " " ? "5.55o ⁵"

F ktgpecpcncp"lwo xj "i twr " ? "3"i twr "

Mrcukcu'r tqf wnk" *S v+ ? " "i twr "z"r tqf wnk" kcu'r "

" " " " ? "3z52+"i twr "z"5.55o ⁵"

" " " " ? ""322"o ⁵"j ctk"

f0 Y cmw"

Y cmw" ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? $\frac{106,55 \text{ m}^3}{100 \text{ m}^3/\text{hari}}$? "3.287"j ctké "4"j ctk"

g0 Dlc{c" { cpi "f k gtncncp"

Dlc{c" ? "xqmo g"z"pkck"J URM"

" " ? "328.77"z"Tr 04250822./"

" " ? "Tr 04308620527./"

6050"Wtwi "Vcpcj "Mgo dcrk"

Rngtgcpcp"wtwi "vcpcj "ngo dcrk"f kngtgcncp"

f gpi cp" o gpi i wpcncp" vpci c" o cpwuk0 F ko cpc"

f crco "ucw"i twr "vgtf k k f ctk"o cpf qt" f cp"r go dcpw"

wncpi 0' Dgtknw" cperkc" J URM" 4237" Rngtgcpcp"

wtwi "vcpcj "ngo dcrk"'

Vcdgri60! "PkrckJ URM4237"Uwtcdc{c" / "Rgpi wtwi cp"Vcpcj "Mgo dcrk"

24.01.02.13	Pengurangan tanah kembali	m³			
Upah :					
23.02.04.01.01.F	Mandor	0,025	O.H	120.000	3.000
23.02.04.01.04.F	Pembantu Tukang	0250	O.H	99.000	24.750
Jumlah:				27.750	

		Nilai HSPK :	27.750
c0	Xqno g'r gngtlccp" "	? '99: .5: "o ⁵ "	
d0	Lwo nçj "ngdwwj cp"lwo dgt"f c{ c"		
	O cpf qt" "	? $\frac{0,025}{0,025} \times 1$ grup"? '3"Qtcp" "	
	Rgo dcpw"Vwncpi " ?	? $\frac{0,250}{0,025} \times 1$ grup"? '32"Qtcp" "	
e0	Mcr cukcu'r tqf wmk" S vt" "		
	Rtqf wmkhkcuc'r gt"qtcpi " "	? $\frac{1 \text{ hari}}{0,25 \text{ hari}} \times 1 \text{ m}^3$	
	" " " "	? "6"o ⁵ "	
	F ktgpecpcncp"lwo nçj "i twr " ?	"3"i twr "	
	Mcr cukcu'r tqf wmk" S vt" "	? "i twr "z"r tqf wmkhkcuc"	
	" " " "	? "3z32+"i twr "z"6"o ⁵ "	
	" " " "	? ""62"o ⁵ "j ctk"	
f0	Y cmw'		
	Y cmw'	? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "	
	" "	? $\frac{778,38 \text{ m}^3}{40 \text{ m}^3/\text{hari}}$ "? '3; .67"j ctké"42"j ctk"	
g0	Dlc{ c{ cpi "fkr gtrncp"		
	Dlc{ c" ?	"xqno g"z"pkckJ URM"	
	" "	? '99: .5: "z"Tr 049072./"	
	" "	? "Tr 0430822067./"	
606	Wtwi "Uktw'Dcy cj "Npck'gdcn'64"eo "		
	Rngtlccp" wtwi " ukw' dcy cj " npck'		
	f kngtlncp""o gpi i wpcncp"vgpci c"o cpwuk"f gpi cp"		
	dcpwcp" cnv' ugo r gt0' F ko cpc" f cnv " ucw" i twr "		
	vgf k'k'f ctk'o cpf qt"f cp"r go dcpw"wnncpi 0'Dgtknw"		
	cpckuc"J URM4237'Rngtlccp"wtwi "ukw0'		
Vedgri60; 'PkckJ URM4237'Umtcdc{ c/'Rgpi wtwi cp'Uktw'*r cf cvt'			
24.01.02.16	Pengurangan sirtu (padat)	m ³	

Upah :					
23.02.04.01.01.F	Mandor	0,025	O.H	120.000	3.000
23.02.04.01.04.F	Pembantu Tukang	0,250	O.H	99.000	24.750
				Jumlah:	27.750
Sewa Peralatan :					
23.02.05.11.06.12.F	Sewa Stemper	0,0088	jam	104.500	920
				Jumlah :	920
Bahan :					
20.01.01.04.01.F	Sirtu	1,2	m3	156.000	187.200
				Jumlah:	187.200
				Nilai HSPK :	215.870

c0 Xqno g'r gngtlccp" " ? "549.48'o⁵"
 d0 Lwo n'j "ngdwwj cp'lwo dgt'f c{c"
 Ocpfqt" " ? " $\frac{0,025}{0,025}$ × 1 grup"? "3"Qtcpi "
 Rgo dcpw"Vwnepi " ? " $\frac{0,250}{0,025}$ × 1 grup"? "32"Qtcpi "
 e0 M'rcukcu'r tqf wmk"*S v+" " "
 Rtqf wmkhscu"crv" " ? " $\frac{1 \text{ hari}}{0,0088 \text{ hari}}$ × 1 m³"
 " " " " ? "6'o⁵"
 Fk'gpecpcncp'lwo n'j "i twr" ? "4""i twr"
 M'rcukcu'r tqf wmk"*S v+" ? " "i twr "z'r tqf wmkhscu"
 " " " " ? "4z32+i twr "z "6o⁵"
 " " " " ? """: 2'o⁵"j ctk"
 f0 Y cmw"
 Y cmw" ? " $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "
 " " ? " $\frac{327,26 \text{ m}^3}{80 \text{ m}^3/\text{hari}}$ "? "6.2; "j ctk'6 "7"j ctk"
 g0 Dlc{c"{cpi "f k'gtwnncp"
 Dlc{c" ? "xqno g'z'pkck'J URM"
 " " ? "549.48'z'Tr 04370 92./"

" " ? "Tr 092086706: 7./"

6007 "Dwepi "Vepcj "I cnkcp""

Rngntlccep"dwepi "vpcj "i cnkcp"fkngtlncep"
f gpi cp" o gpi i wpcnēp" cnēv' dgtecv' dgtwr c" f wo r "
tven' f cp" vgcpi c" o cpwuk0' F ko cpc" f cnēo " ucw'
i twr "gtf kKf ctK'r go dcpw"wnēpi 0Dgtknw'cperkc"
J URM'4237'Rngntlccep"wt wi 'r cukt "<

'Vedgni6032'P kēKJ URM'4237'Uwt edc{ c/'Rgpi cpi nēwep'vpcj 'hgnet "
r tqf gni'

24.01.02.06	Pengangkatan Tanah keluar Proyek	m³			
<u>Upah :</u>					
23.02.04.01.04.F	Pembantu Tukang	0,250	O.H	99.000	24.750
Jumlah:					24.750
<u>Sewa Peralatan :</u>					
20.02.04.01.04.F	Sewa Dump Truck 5 ton	0,250	jam	66.100	16.525
Jumlah:					16.525
Nilai HSPK :					41.275

c0 Xqno g'r gngtlccep" " ? "437.86"o⁵"

d0 Lwo nēj "ngdwwj cp'lwō dgt'f c{ c"

Rgo dcpw"Vwnēpi " ? $\frac{0,250}{0,250} \times 1$ grup"? 3"Qtēpi "

e0 Mērcukcu'r tqf wmk" S v" " "

Rtqf wmkkcu'cnēv' " ? $\frac{1 \text{ hari}}{0,25 \text{ hari}} \times 1 \text{ m}^3$ "

" " " " ? "6"o⁵"

F kēgpecpcnēp'lwo nēj "i twr " ? "8"i twr "

Mērcukcu'r tqf wmk" S v" ? " "i twr "z'r tqf wmkkcu"

" " " " ? "8z3+i twr "z"6"o⁵"

" " " " ? ""46"o⁵"j ctk"

f0 Y cmw'

Y cmw'	? " $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "
" "	? " $\frac{215,64 \text{ m}^3}{24 \text{ m}^3/\text{hari}}$ "? " : . : 7"j ctKé", "j ctK"
g0 Dkc{c"}{cpi "f k gtncnp"	
Dkc{c"	? "xqno g"z"pkckJ URM"
" "	? "437.86"z"Tr 0630497./"
" "	? "Tr 0: Q 220/63./"

606 RGMGTLCPP'RQPF CUK'

6060 Rngntlccp'Rqpf cuk'

Rngntlccp'r qpf cuk'o gnr wk'<

c0 Rgo cpecpi cp"vcp "r cpecpi "

d0 Rgpi grucp"Tr gp{co dwpi cp"vcp "r cpecpi "

F crco " o go krtj " r gtrucp" r go cpecpi cp"

f kf cuctncp" r cf c" cpcnkuku" dgdec" vcp " r cpecpi "

{cpi " f ki wpcncp0' F ko cpc" r gtj kwpi cpp{c"

f kf cuctncp"r cf c"<

- Igplu'dej cp" <"Vcp "r cpecpi "dgvp"

- Rgpco r cpi " <"Rgtugi k'52'Z'52"

- O ww'Dgvp" <"M/722"

- Rcplcp "vcp " <"34"o "

F crco " TMU" f kugdwncp" dej y c" r rngtlccp"
r go cpecpi cp" o gpi i wpcncp" crv" r cpecpi " ukngo "
j {f t qru"klgevkqp" "lcm"lp"r kg+"f gpi cp"ncr cukscu"342"
vqp0Dgtkmw'ur gukkncuk'crv'r cpecpi "<

- O qf gni " " <"V{r g"[\ ["5: 2V"

- O czko wo "lcmkpi "hqteg" <"5: 22"nP "

- Lcmkpi "Ur ggf " " <"3.7"o lo kp"

- Nqpi "urkr r gt"o qxgo gpv" <"7.8"o lo kp"

- Uj qtvurkr r gt"o qxgo gpv" <"4.: "o lo kp"

- Cy kpi "dcm'cpi rg" " <37"Áuy kpi "
 - O cej kpg"q xgtcm'ugrh'y gli j v"342"V"
- c0 Y cmw'Ukmmw'Rgo cpecpi cp"
- Fctkf'cvc"ó"f'cvc"crv'dgtcv'f'kvcu."o cnc"fer'cv'f'kj kwpi "
- rtqf'wm'kksu" {cpi " f'kgpwn'cp" fctk' y cmw' ukmmw"
- r go cpecpi cp"Vlcp' 'r cpecpi 'ugdci ck'dgtkmmw"<
- 30 Y cmw'Rgtukr cp"Vlcp' 'Rcpecpi 'Dcy cj "
- Rgpi cpi n'vcp"Vlcp' 'Rcpecpi " "'<7"o gpk"
- Rgpi cwtcp"Rquluk'Vlcp' 'Rcpecpi "<7"o gpk"- "
- Vqvcn"Y cmw'Rgtukr cp" *3+" "'<32"o gpk"
- "
- 40 Y cmw'Rgo cpecpi cp"*Vlcp' 'r cpecpi "dcy cj +"
- Vlpi i k'Vlcp' 'r cpecpi " <34"o "
- Mgegr'cvcp' 'r cpecpi " <3.7"o lo kp"
- Y cmw"*4+" " <tinggi ting pancang,,
- " " " <kecepatan pancang
- " " " ? " $\frac{12 \text{ m}}{1,5 \text{ m/min}}$ =" "o gpk"
- 50 Y cmw'Rgtukr cp"Vlcp' 'Rcpecpi 'Cvcu"
- Rgpi cpi n'vcp"Vlcp' 'Rcpecpi " "'<7"o gpk"
- Rgpi cwtcp"Rquluk'Vlcp' 'Rcpecpi "<7"o gpk"- "
- Vqvcn"Y cmw'Rgtukr cp" *5+" "'<32"o gpk"
- "
- 60 Y cmw'Rgpi grucup""
- Rcplcp' 'uluk'Vlcp' '*u+" <52"eo "
- Mgk'kpi 'r cpecpi '*m+" <6"z"u""
- " " " ? "6"z"52"eo "? "342"eo "
- Mgegr'cvcp' 'r gpi grucup" <7"eo lo kp"*tvc"ó""
- "tvc"fer'kcr cpi cp+"
- Y cmw"*6+" " <keliling pancang "
- " " " <kecepatan pengelasan
- " " " ? " $\frac{120 \text{ cm}}{5 \text{ cm/min}}$ " ? "46"o gpk"

O gpi i wpcncp" 4" dwcj "cncv" nu. "ugj lpi i c" y cmw"
r gpi grucp "6+?" 46"o gpk4" ? "34"o gpk"

70 Y cmwRgo cpecpi cp "kcp i" r cpecpi "cxcu"

Vlpi i k'kcp i" r cpecpi " <34"o "

Mgegr cwp" r cpecpi " <3.7"o lo kp"

Y cmw"7+" " <tinggi ting pancang,,
kecepatan pancang

" " " ? " $\frac{12 \text{ m}}{1,5 \text{ m/min}}$ = " : "o gpk"

Ugj lpi i c" y cmw' qvcn' ukmw" r go cpecpi cp" wpwni' 46"

o ø' f cr cv' f kngvcj wk' f gpi cp "8" + "<"

8" ? "3"- "4"- "5"- "6"- "7"

" ? "32"o gpk"- " : "o gpk"- "32"o gpk"- "34"o gpk"- " : ""
o gpk"

8" ? "6: "o gpk"

Ugf cpi nc p" y cmw" { cpi " f k' gtnwncp" wpwni'

r go cpecpi cp" r gto gvgtp { c "8ø+"

" ? "6: "o gpk46"o gvgtp" ? "4"o gpk4o "

d0 Y cmw'Rkpf cj "Rqukuk"

F crco " r gngtlccp" r go cpecpi cp. " vgtf cr cv"

dgdgter c" kcp i" r cpecpi " f crco " ugdwcj " r kgecr g" f cp"

ngvcn' r kgecr g" ugdc i ck' r qpf cuk' f ct k' uwcw' dcpi wpcp"

{ cpi " vgtugdct " f gpi cp" lctcn' vgtvgpw' r cf c" dcpi wpcp0

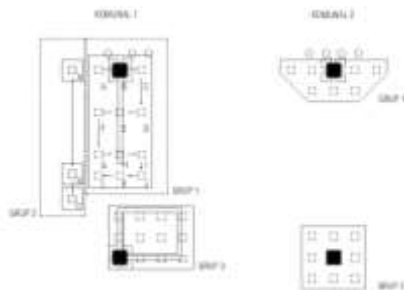
F ct k' ukp k" o cnc " f k' gtnwncp" y cmw" r gtr kpf cj cp" cncv"

r cpecpi " lctcn' k' g' cpvct " kknr cpecpi " f crco " ucw' i twr. "

cpvct " i twr " f crco " ucw' nqo wpcn " f cp" r gtr kpf cj cp" cpvct "

nqo wpcn' r kpp { c0'

Dgtknw'cf crcj 'y cmw'r gtr kpf cj cp"cpvct"vkn'i
cpepci 'f crco 'ucw'i twr "<"



I co det'60'F gpcj 'Rgo cpepci cp'f crco '3'I twr "

"

Crw'r cpepci 'r cf c'i twr '3'napo wpcn'3"<"

- Rgo cpepci cp" f ko wrck' f ctk' vkn'i C" ngo wf kcp"
f krcplwnep'ng'vkn'iD'f cp'vkn'iE'f gpi cp'ngegr cvcp"
r kpf cj "Uj qt v'urk r gt 'o qxgo gpv'ugdguet'4.: 'o lo kp0'
- Rgo cpepci cp" dgtrcplw' f ctk' vkn'i E" ng' vkn'i F"
f gpi cp'ngegr cvcp"r kpf cj "npi "urk r gt 'o qxgo gpv"
ugdguet'7.8'o lo kp0'

Ugj kpi i c'f ctk'i co det'cnw'r go cpepci cp'i twr "
3'f cr cv'f kngvj wkr gti gtcncp'cnv'ugdci ck'dgtknw'<"

30 Rkpf cj " r qukuk" f gpi cp" ngegr cvcp" npi " urk r gt "
o qxgo gpv"

Htgmwgpuk'i gtcni' <"4'ncrk"

<"E'6'F ""? "3.: "o "

" " " <"H'6'I ""? "3.: "o "

Vqvcn'lctcm' " <"5.8'o "

Y cmw'" " <total jarak, " 3,6 m "
kecepatan 5,6 m/min

" " " ? ""2.8'o gpk"

40 Rkpf cj 'r qukuk'f gpi cp"uj qt v'urk r gt 'o qxgo gpv"

Htgmwgpuk'i gtcni' <"; "ncrk"

Nqncuk'	Ht gmwgpukl gtcni' cni'f cni' '3" i t wr"		Lctcni'		Mgegr cwp"		y cniw'
			*o +'		*o b kp+''		
	mpi "	uj qt v'	mpi "	uj qt v'	mpi "	uj qt v'	*o gpk+''
I t wr "3"	3"	8"	2.; "	2.; "	7.8"	4.: "	4.3"
I t wr "4"	4"	8"	2.; "	2.; "	7.8"	4.: "	4.5"
I t wr "5"	3"	4"	2.; "	2.; "	7.8"	4.: "	2.: "
I t wr "6"	3"	4"	2.; "	2.; "	7.8"	4.: "	2.: "
I t wr "7"	3"	2"	6"	2"	7.8"	4.: "	2.9"
Mqo wpcni'5"							
I t wr "3"	3"	8"	2.; "	2.; "	7.8"	4.: "	4.3"
I t wr "4"	4"	8"	2.; "	2.; "	7.8"	4.: "	4.5"
I t wr "5"	6"	42"	2.; "	2.; "	7.8"	4.: "	9.3"
I t wr "6"	3"	6"	2.; "	2.; "	7.8"	4.: "	3.6"
I t wr "7"	3"	2"	3.97"	2"	7.8"	4.: "	2.5"
Mqo wpcni'6"							
I t wr "3"	3"	8"	2.; "	2.; "	7.8"	4.: "	4.3"
I t wr "4"	4"	8"	2.; "	2.; "	7.8"	4.: "	4.5"
I t wr "5"	4"	8"	2.; "	2.; "	7.8"	4.: "	4.5"
I t wr "6"	3"	6"	2.; "	2.; "	7.8"	4.: "	3.6"
I t wr "7"	3"	2"	3.97"	2"	7.8"	4.: "	2.5"
Mqo wpcni'7"							
I t wr "3"	3"	8"	2.; "	2.; "	7.8"	4.: "	4.3"
I t wr "4"	4"	8"	2.; "	2.; "	7.8"	4.: "	4.5"
I t wr "5"	4"	8"	2.; "	2.; "	7.8"	4.: "	4.5"
I t wr "6"	3"	6"	2.; "	2.; "	7.8"	4.: "	3.6"
Mqo wpcni'8"							
I t wr "3"	4"	; "	3.: "	2.; "	7.8"	4.: "	5.7"
I t wr "4"	6"	5"	2.; "	2.; "	7.8"	4.: "	3.8"

Nqncuk'	Ht gnwgpukI gtcmI' cncvfcico '3" i twr "		LctcmI'		Mgegrcwp"		y cmw'
			*o +'		*o b lp+'		
	mpi "	uj qt v'	mpi "	uj qt v'	mpi "	uj qt v'	*o gplw+'
I twr "5"	4"	4"	2.; "	2.; "	7.8"	4.: "	3.2"
I twr "6"	3"	3"	2.; "	2.; "	7.8"	4.: "	2.7"
I twr "7"	3"	3"	2.; "	2.; "	7.8"	4.: "	2.7"
Vqvcn'	"	"	"	"	"	"	75.2"

Vedgn6034'FwtcukI'go cpecpi cp'cpvct'i twr '7'3"

Nqncuk'	Ht gnwgpukI gtcm' cncvfcico '3" i twr "	Lctcm'	Mgegrcwp"	y cmw'
		*o +'	*o b lp+'	
	mpj "	mpj "	mpj "	*o gplw+'
Mqo wpcn'3"				
I twr '3'/'I twr '4"	3"	3.3"	7.8"	2.4"
I twr '4'/'I twr '5"	3"	3.97"	7.8"	2.5"
I twr '5'/'I twr '6"	3"	9.6"	7.8"	3.5"
I twr '6'/'I twr '7"	3"	6.3"	7.8"	2.9"
I twr '7'/'I twr '8"	3"	5.6"	4.: "	3.4"
Mqo wpcn'4"				
I twr '3'/'I twr '4"	3"	8.4"	7.8"	3.3"
I twr '4'/'I twr '5"	3"	8.87"	7.8"	3.4"
I twr '5'/'I twr '6"	3"	9.3"	7.8"	3.5"
I twr '6'/'I twr '7"	3"	3.9"	4.: "	2.8"
Mqo wpcn'5"				
I twr '3'/'I twr '4"	3"	8.4"	7.8"	3.3"
I twr '4'/'I twr '5"	3"	9.47"	7.8"	3.5"
I twr '5'/'I twr '6"	3"	5.: "	7.8"	2.9"
I twr '6'/'I twr '7"	3"	4.27"	7.8"	2.6"

Nqncuk'	Ht gnwgpuk'I gt enl' cncvf cnc'o '3" i t wr''	Lct enl'	Mgegr cncp''	y cncw''
		*o +'	*o b lp+'	
	npi ''	npi ''	npi ''	*o gplk+'
Mqo wpcn'6''				
I t wr '3'/'I t wr '4''	3''	8.4''	7.8''	3.3''
I t wr '4'/'I t wr '5''	3''	8.4''	7.8''	3.3''
I t wr '5'/'I t wr '6''	3''	8.87''	7.8''	3.4''
I t wr '6'/'I t wr '7''	3''	4.27''	7.8''	2.6''
Mqo wpcn'7''				
I t wr '3'/'I t wr '4''	3''	8.4''	7.8''	3.3''
I t wr '4'/'I t wr '5''	3''	8.4''	7.8''	3.3''
I t wr '5'/'I t wr '6''	3''	8.87''	7.8''	3.4''
Mqo wpcn'8''				
I t wr '3'/'I t wr '4''	3''	3.8''	7.8''	2.5''
I t wr '4'/'I t wr '5''	3''	7.77''	7.8''	3.2''
I t wr '5'/'I t wr '6''	3''	6.57''	7.8''	2.: ''
I t wr '6'/'I t wr '7''	3''	4.87''	4.: ''	2.; ''
Vqncn'				43.8''

Vcdgrl6035'F wt cukt go cpecpi cp'cpwt'hqo wpcn'

Nqncuk'	Ht gnwgpuk' I gt enl'cncv' f cnc'o '3" i t wr''	Lct enl'	Mgegr cncp''	y cncw''
		*o +'	*o b lp+'	
	uj qt v'	uj qt v'	uj qt v'	*o gplk+'
Cncv'3''				
nqo wpcn'3'/'nqo wpcn'4''	3''	; ''	4.: ''	5.4''
nqo wpcn'4'/'nqo wpcn'5''	3''	9''	4.: ''	4.7''
nqo wpcn'5'/'nqo wpcn'6''	3''	: ''	4.: ''	4.; ''

nqo wpcn'6"/"nqo wpcn'7"	3"	9"	4.: "	4.7"
nqo wpcn'7"/"nqo wpcn'8"	3"	; "	4.: "	5.4"
Vqvcn'				36.5"

"

Lcf k'vqcn'y cmw'r kpf cj "r quuk"*9+"ugdci ck'dgtknw"<

? "Y cmw'r kpf cj "r quuk" f crco "3"i twr "- "cpvct"i twr "

f crco "3'nqo wpcn'- "cpvct'nqo wpcn'

? "75"o gpk"- "43.8"o gpk"- 36.5"o gpk"

? " : .; "o gpk"

Y cmw'Vqvcn'Rgo cpecpi cp"

F ctk' r gtj kwpj cp" f kvcu." y cmw' vqcn'
r go cpecpi cp" f cr cv'f kr gtqngj "ugdci ck'dgtknw"<

Xqno g'r go cpecpi cp"*X+" ? "534: "o ø"

Y cmw'vqcn'"""""" ? " *y cmw' ukmwu" r gt" o gvgt" z"
""""xqno g" + " - " y cmw' r kpf cj ""
""""r quuk"

? " *' 4" o gpkvlo " z" 534: " o " + " - "

"""" : .; "o kp"

? "8566.; "o gpk"

Y cmw'tcv'tcv'vpcwn'3"o ø'r go cpecpi cp"<

Tcv"ó'tcv'"" ? "Waktu total"" ? "6344,9 menit,""
Volume 3128 m

? "4.25"o gpkvlo "

Ugj kpi i c" f ctk' y cmw' ukmwu" vqcn' vgtugdw'
f cr cv'f ksgpwncp"lwo nj "ukmwu" f crco "3"lco . "ugdci ck'
dgtknw"<

Y cmw'ukmwu" ? "60 menit"" ? " 60 menit ""
rata-rata 2,03 menit/m

" " " ? "4; .77"o "

- Rtqf wmkksu'cncv'r cpecpi "r gt"lco "<

• Hcmqt"qr gtcvqt" f cp"o gncpkn'

Mqpf kuk' <"gtco r kl'

P krck' " <"2.: 2"

- Hcmqt"qr gtcvqt"crv"fc p"r go gñj ctecp"o gulk"
Mqpf kuk" <dckmugnerk"
P kck" " <2.: 5"

S " ?'s 'z'y cmw'tukmw'z"Gm'

" ?'3'z'4; .77'o 'z'*2.: 2'z'2.: 5+?' '3; .84'o lco "

Fcmo '3'j ctk'ngtlc'uco c'f gpi cp': 'lco 'ngtlc.'ugj kpi i c"

r go cpecpi cp'f cr cv'f kugnguckmcp'f cmo "<

S " fcmo '3'j ctk'ngtlc"? '3; .84'o lco 'z': 'lco "'

""""?'378.; 8'o 'fcmo '3'j ctk'

Y cmw' ? " $\frac{\text{Volume pemancangan}}{\text{waktu dalam 1 hari}}$ "? " $\frac{3128 \text{ m}}{156,96 \text{ m/hari}}$ "

" " ?'3; .; 4'j ctk'ë'42'j ctk'

Icf k'y cmw'r go cpecpi cp'42'j ctk'

e0 Rgtj kwpi cp'Dlc{c"

- Dlc{c"crv"fc p"dcj cp"

30 Vlcpi " r cpecpi " Us wctg" Rkrg" 52" z" 52" eo "

*Uwo dgt"<RV0Xctlc"Wucj c'Dgvqp+" "

J cti c'r gt'o ³" ?"Tr 07; 80 29./lo ³"

Xqmxo g" " ?"534: "o "

Dlc{c"" " ?"534: 'o 'z"Tr 07; 80 29./"

" " " ?"Tr 030 890848092./"

40 J {ftqrku'kplgevkqp""

*Uwo dgt"<RV0Vgpgq"Kpf qpgukc"t"

O qd0IF go qd0' ?"Tr 0490722022./IWpk"

Uwr r n'Vlcpi "" ?"Tr 03: 2022./lo ³"

Rgo cpecpi cp" ?"Tr 087022./lo ³"

Nqcf lwpmqcf'RE'r krg?"Tr 07022./lo ³"

Xqmxo g" " ?"Tr 0534: "o ""

"Dlc{c" " ?"534: 'o 'z"*Tr 087022./"

- "Tr 03: 2022./"- "Tr 0'

7022./+" - " Tr 0""

490722022./"

" " " ?"Tr 0: 2; 0722022./"*****

Vqvcrl' " ? 'Tr 0408980848092./"

60604 Rgecj "Mgr crn"Rcpecpi "

Rgecj " ngr crn" r cpecpi " o gpi i wpcnnp" vgcpi c"
o cpwukc0'F ko cpc"fcrc "3"i twr "vgtfkk'fctk'4"qtcpi "
r gngtlc"{cpi "fcr cv'o gp{grgucknnp"tcw"ó"tcw"8"dwcj "
vcpi 'r cpecpi "lj ctk'uwo dgt<gpi co cwp'f khr cpi cp-0'
c0 Xqno g'r gngtlccp" ? "398"dwcj "
d0 Mrcukcu'r tqf wmk' *S v+" "

Rtqf wmkhkcuc'r gt"qtcpi " ? $\frac{6 \text{ tiang pancang}}{2 \text{ orang}}$

" " " " ? "5'vcpi 'r cpecpi lqtcpi "
F kgpecpcnnp'lwo rcj 'i twr " ? "8'i twr "
Mrcukcu'r tqf wmk'S v+" ? " 'i twr 'z'r tqf wmkhkcuc'
" " " " ? "8'i twr 'z'5'r lqtcpi "
" " " " ? "3: 'vcpi 'r cpecpi lj ctk'

e0 Y cmw"

Y cmw" ? " $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "
" " ? " $\frac{176 \text{ buah}}{18 \text{ tp/hari}}$ " ? ; 9'j ctk'é "32'j ctk'

f0 Dlc{c"{cpi "fkr gtnnnp"

Dlc{c""? "rc c"fwcuk'z'lwo rcj "r gngtlc'z'wr cj "
" """"? 32'j ctk'z '*4'r gngtlc'z'8'i twr +z' "Tr 0; ; 022./"
" """"? "Tr 0330 : 2022./"

60605 Rngntlccp'Rqpf cuk'Dcw'Merk'Rqy gt'J qwug"

Rngntlccp" r qpf cuk' dcw' nerk' fkgntlcncp"
o gpi i wpcnnp'vgpci c"o cpwukc0'F ko cpc"fcrc "ucw'i twr "
vgtfkk' fctk' o cpfqt." Mgr crn" wnncpi ." Vwnncpi ." fcp"
r go dcpw'wnncpi 0Dgtknw'cpcrkuc'J URM'4237'Rngntlccp"
Rqpf cuk'Dcw'Merk'<

Vcdgri6036'P lckJ URM'4237'Uwtcdc{c'/'Rngntlccp'Rcurpi cp'Dcw'Merk'

24.02.01.13

Pekerjaan Pasangan Batu Kali

m³

Upah					
23.02.04.01.01.F	Mandor	0,075	O.H	120.000	9.000
23.02.04.01.02.F	Kepala Tukang	0,075	O.H	110.000	8.250
23.02.04.01.03.F	Tukang	0,750	O.H	105.000	78.750
23.01.04.01.04.F	Pembantu Tukang	1,50	O.H	99.000	148.500
				Jumlah:	244.500
Bahan :					
20.01.01.02.02.F	Semen PC 50 Kg	2,72	Zak	66.000	179.520
20.01.01.04.03.F	Pasir Pasang/Plester	0,5440	m3	168.400	91.610
20.01.01.05.03.01.F	Batu Kali Belah 15/20	1,20	m3	428.000	513.600
				Jumlah:	784.730
				Nilai HSPK :	1.029.230

"

c0 Xqno g'r gngtlccp" " ?"7.43"o "

d0 Lwo rj "ngdwwj cp'owo dgt'f{c"

$$O\text{ cpf qt" " } ? \frac{0,075}{0,075} \times 1 \text{ grup? "3"Qtcp"i "}$$

$$M\text{gr cm"Vwncpi " } ? \frac{0,075}{0,075} \times 1 \text{ grup? "3"Qtcp"i "}$$

$$V\text{wncpi " " } ? \frac{0,750}{0,075} \times 1 \text{ grup? "32"Qtcp"i "}$$

$$R\text{go dcpw"Vwncpi " } ? \frac{1,50}{0,075} \times 1 \text{ grup? "42"Qtcp"i "}$$

e0 Mcr cukcu'r tqf wmk"S v+" "

$$R\text{tqf wmkcu'r gt"qtcp"i " } ? \frac{1 \text{ hari}}{1,50 \text{ hari}} \times 1 \text{ m}^3$$

$$\text{" " " " } ? "2.889"o "$$

$$F\text{kgpecpcncp"lwo rj "i twr " } ? "3"i twr "$$

$$M\text{cr cukcu'r tqf wmk"S v+" } ? "i twr "z'r tqf wmkcu"$$

$$\text{" " " " } ? "3z42+z"2.889"o "$$

$$\text{" " " " } ? "35.5"o \text{ l j ctk"}$$

f0 Y cmw"

Y cmw" ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$

" " ? $\frac{5,21 \text{ m}^3}{13,3 \text{ m}^3/\text{hari}}$? "2.48"j ctk'é "3"j ctk"

g0 Dlc{c"{cpi "f k gtwnep"

Dlc{c" ? "xqmo g"z'pkck'J URM"

" " ? "7.43"z'Tr 0304; 0452./"

" " ? "Tr 0708404: 8.44"

6060 Rngtllccp'Rgpi gdqtcP'Nwdcpi "Utqwu'Rkg"

Rngtllccp" r qpf cuk' dcw" nerk" f kngtllcncp"
o gpi i wpcncp'vgpci c'o cpwuk'f gpi cp'dcpwcp'cncv'dcpw"
utqwu'r kg0F ko cpc'f cncv 'ucw'i twr 'vgtf kkk'f ctk'o cpf qt."
Mg r cnc'wnepi . "Vwnepi . "f cp"r go dcpw'wnepi 0'Dgtknw"
cpcrkuc'J URM'4237'Rngtllccp'r gpi gdqtcP'Nwdcpi "utqwu"
r kg" <

Vcdgn6037'P hck'J URM'4237'Umtcdc{ c''Rgo dwewcp'Nwdcpi "Uqwu'Rkg"

24.02.01.23	Pembuatan Lubang Strous Pile kedalaman 3m		Titik		
Upah :					
23.02.04.01.01.F	Mandor	0,072	O.H	120.000	8.640
1,44	Pembantu Tukang	1,44	O.H	99.000	142.560
				Jumlah:	151.200
Sewa Peralatan :					
20.01.01.02.02.F	Sewa Alat Bantu Strouss Pile	1,20	Jam	10.200	12.240
				Jumlah:	12.240
				Nilai HSPK :	163.440

Wpwnlr gto gygt'ictlp{c" ? $\frac{\text{nilai HSPK}}{3}$? $\frac{163.440}{3}$

" " " " ? "Tr 07606: 2./"

c0 Xqmo g'r gngtllccp" ? "432"o "

d0 Lwo nĵ 'hgdwĵ cp'ūwo dgt'f c{c"

O cpf qt" " ? $\frac{0,024}{0,024} \times 1 \text{ grup} ? "3" \text{Qtcpi} "$

Rgo dcpw'Vwncpi " ? $\frac{0,48}{0,024} \times 1 \text{ grup} ? "42" \text{Qtcpi} "$

e0 Mcr cukcu'r tqf wmk"*S v+" "

Rtqf wmkhkcuc'r gt"qtcpi " ? $\frac{1 \text{ hari}}{0,48 \text{ hari}} \times 1 \text{ m}^{1"}$

" " " " ? "4.2: 5'o ³"

F ktgpecpcncp'lwo nĵ 'i twr " ? "3'i twr "

Mcr cukcu'r tqf wmk"*S v+" ? " 'i twr 'z'r tqf wmkhkcuc"

" " " " ? "3z42+i twr 'z'4.2: 5'o "

" " " " ? "64'o ĵ ctk"

f0 Y cmw'

Y cmw' ? $\frac{\text{Volume}}{\text{Kapasitas produksi}} "$

" " ? $\frac{210 \text{ m}^1}{42 \text{ m}^1/\text{hari}} ? "7.26" \text{ĵ ctk} \text{é} "8" \text{ĵ ctk}$

g0 Dlc{c{cpi 'fkr gtnncp"

Dlc{c" ? "xqno g'z'pkckJ URM"

" " ? "432"z'Tr 07606: 2./"

" " ? "Tr 03306620 22.22/"

607 RGMGTLCCP'DGVQP'"

60708 Rngtllccp'Ncpvk'ngtlc"vgdci7"eo "

Rngtllccp"ncpvk'ngtlc" f kngtlcncp" o gpi i wpcncp"

vgpci c"o cpwuk0'F lo cpc"fcnc "ucw'i twr "vgtf k k'f ctk"

O cpf qt"fcpr go dcpw'wncpi 0'Dgtknw'cpcrkuc"J URM"

4237"Rngtllccp'ncpvk'ngtlc"<

Vcdgri6038'P kckJ URM4237'Uwtcdc{c/'Rngtllccp'Dgvqp'*3re4ru5nt+'"

24.03.01.13	Pekerjaan Beton (1Pc : 2 Ps : 3 Kr)	m3	SNI 7394 :2008 (6.7)
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Upah :					
23.02.04.01.01.F	Mandor	0,083	O.H	120.000	9.960
23.02.04.01.02.F	Kepala Tukang batu	0,028	O.H	110.000	3.080
23.02.04.01.03.F	Tukang Batu	0,275	O.H	105.000	28.875
23.02.04.01.04.F	Pembantu Tukang	1,65	O.H	99.000	163.350
Jumlah:					205.265
Bahan:					
20.01.01.02.01.F	Semen Portland (40Kg)	9,275	Zak	63.000	584.325
20.01.01.04.04.F	Pasir Beton	0,4363	m3	232.100	101.265
20.01.01.05.04.01.F	Batu Pecah Mesin 1/2 cm	0,5511	m3	466.000	256.813
23.02.02.02.01.F	Air (biaya air tawar)	215	liter	27	5.805
Jumlah:					948.208
Nilai HSPK :					1.153.473

"

c0 Xqwo g'r gngtlccp" " ? "34.43"o⁵"

d0 Lwo rcj "ngdwwj cp"uwo dgt"f c{c"

O cpf qt" " ? $\frac{0,083}{0,083} \times 1 \text{ grup}?$ "3"Qtcp" "

Mgr crc"Vwncpi " ? $\frac{0,028}{0,083} \times 1 \text{ grup}?$ "3"Qtcp" "

Vwncpi " " ? $\frac{0,275}{0,083} \times 1 \text{ grup}?$ "6"Qtcp" "

Rgo dcpw"Vwncpi " ? $\frac{1,65}{0,083} \times 1 \text{ grup}?$ "43"Qtcp" "

e0 Mgr cukcu'r tqf wmk"*S v+""

Rtqf wmkhscu'r gt"qtcpi " ? $\frac{1 \text{ hari}}{1,65 \text{ hari}} \times 1 \text{ m}^3$ ""

" " " " ? "2.828"o⁵"

F k g p e c p c n e p " l w o n j " i t w r " ? " 3 " i t w r "
 M c r c u k c u " r t q f w n k " * S v " ? " i t w r " z " r t q f w n k h s c u "
 " " " " ? " 3 z 4 3 + i t w r " z " 2.828 " o "
 " " " " ? " 34.95 o l j c t k "

f0 Y c m w "

Y c m w " ? " $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? " $\frac{12,21 \text{ m}^3}{12,73 \text{ m}^3/\text{hari}}$ " ? " 2. ; 8 " j c t k ' 3 " j c t k "

"

g0 D l c { c " { c p i " f l r g t n n e p "

D l c { c " ? " x q n w o g " z " p k r c k J U R M "

" " ? " 34.43 " z " T r 0 3 0 7 5 0 6 9 5 . / "

" " ? " T r 0 3 3 0 : ; 0 2 4 . 6 4 "

60704 R g n g t l c c p " R q g t "

607040 R g n g t l c c p " D g n k u k p i "

R g n g t l c c p " r g n g t l c c p " d g n k u k p i " r q g t "
 f k n g t l c n e p " f g p i c p " d e j c p " o w n k r g m u " f c p "
 o g p i i w p c n e p " v p c i c " o c p w u k o F k o c p c " f c r o "
 u c w " i t w r " v g t f k k " f c t k " O c p f q t . " n g r e r c " w n n e p i . "
 w n n e p i . " f c p " r g o d c p w " w n n e p i 0 " D g t k n w " c p c r k u c "
 J U R M " 4 2 3 7 " R g n g t l c c p " d g n k u k p i " r q g t "<

V c d g r i 6 0 3 9 " P k r c k J U R M " 4 2 3 7 " U w t c d c { c " " R g n g t l c c p " D g n k u k p i " U n q h i "

24.03.01.17	Pekerjaan Bekesting Sloof	m2	SNI 7394 :2008 (6.21)
<u>Upah :</u>			
23.02.04.01.01.F	Mandor	0,026 O.H	120.000 3.120
23.02.04.01.02.F	Kepala Tukang Kayu	0,026 O.H	110.000 2.860
23.02.04.01.03.F	Tukang Kayu	0,26 O.H	105.000 27.300
23.02.04.01.04.F	Pembantu Tukang	0,52 O.H	99.000 51.480

					Jumlah:	84.760
<u>Bahan:</u>						
20.01.01.43.04.06.F	Kayu meranti bekesting	0,045	m3	3.200.000	144.000	
20.01.01.28.04.04.F	Paku usuk	0,3	Kg	22.000	6.600	
20.01.02.01.06.F	Manyak bekesting	0,1	liter	28.300	2.830	
					Jumlah:	153.430
					Nilai HSPK :	238.190

c0 Xq π wo g"r g π gtlccp" " ? "4: : .6; "o ⁴"

d0 Lwo π j "hgdwwj cp"lwo dgt"f c{c"

Ocpfqt" " ? " $\frac{0,026}{0,026} \times 1$ grup"? "3"Qtcp" "

M π rc π "Vw π cp" " ? " $\frac{0,026}{0,026} \times 1$ grup"? "3"Qtcp" "

Vw π cp" " ? " $\frac{0,260}{0,026} \times 1$ grup"? "32"Qtcp" "

Rgo dcpw"Vw π cp" " ? " $\frac{0,52}{0,026} \times 1$ grup"? "42"Qtcp" "

e0 M π rcukcu"r tqf w π uk"*S v π " " "

Rtqf w π uk π ku"r gt"qtcp" " ? " $\frac{1 \text{ hari}}{0,52 \text{ hari}} \times 1$ m²" "

" " " " ? "3.; 45"o ⁴"

F k π gpecpc π cp"lwo π j "i twr" ? "3"i twr" "

M π rcukcu"r tqf w π uk"*S v π " ? " "i twr"z"r tqf w π uk π ku"

" " " " ? "*"3z42+"i twr"z"3.; 45"o ⁴"

" " " " ? "5: .68"o ⁴j ctk"

f0 Y cmw"

Y cmw" ? " $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ " "

" " ? " $\frac{288,49 \text{ m}^2}{38,46 \text{ m}^2/\text{hari}}$ "? "9.7"j ctk π " : "j ctk"

g0 Dlc{c"{cpi "f k π gt π w π cp"

F kcuwo uknep" dgnkukpi " f ki wpcnep" ugdep{cni' 4z"
 r go cnekcpi0Ugi kpi i c'r cf c't gpi i wpccp'hgf wc'hkncp{c"
 f kco dcj '47' "p{c"

Dkc{c" " ?"xqnwo g'z'pkckkJ URM"
 " " " ?"4: : .6; "z'Tr 045: Ø; 2./"
 " " " ?"Tr 08: Ø37Ø98.56"
 "F ki wpcnep"4'hkncp" ?"Dkc{c'z'97' " "
 " " " ?"Tr 08: Ø37Ø98.56"z'97' " "
 " " " ?"Tr 0730758Ø29.48"
 " " " "

607040 Rngntlccp'Rgo dgukcp"

Rngntlccp" rngntlccp" r go dgukcp" r qgt"
 f lngtlcncp"f gpi cp"dcj cp"dguK'wkt"f cp'r qnqu'ugt v"
 o gpi i wpcnep" vpci c" o cpwukc" wpcwn'
 r go cucpi cpp{c0'F ko cpc"f cnc "ucw"i twr "vgtf klt"
 f ctKO cpf qt.'hgr cnc'wnncpi . 'wnncpi . 'f cp'r go dcpw"
 wnncpi 0' Dgtknw" cpcnkuc" J URM" 4237" Rngntlccp"
 r go dgukcp'r qgt"<"

Vcdgrt603: 'P hckkJ URM4237'Uwtcdc{c'/'Rngntlccp't go dgukcp'f gpi cp'Dguk'
 Dgvqp 'r qnquwkt '+'

24.03.01.14	Pekerjaan Pembesian dengan Besi Beton (ulir/polos)	kg	SNI 7394 :2008 (6.17)	
Upah :				
23.02.04.01.01.F	Mandor	0,0004	O.H	120.000 48
23.02.04.01.02.F	Kepala Tukang besi	0,0007	O.H	110.000 77
23.02.04.01.03.F	Tukang Besi	0,007	O.H	105.000 735
23.02.04.01.04.F	Pembantu Tukang	0,007	O.H	99.000 693
Jumlah:				1.553
Bahan:				

20.01.01.09.01.01 .F	Besi Beton (polos) d 10 mm	1,05	Kg	12.000	12.600
20.01.01.35.02.01 .F	Kawat Beton	0,015	kg	23.000	345

Jumlah: 12.945

Nilai HSPK : 14.498

c0 Xq~~n~~wo g'r g~~n~~gtlccp" " ? "3; 0/27"mi "

d0 Lwo ~~ncj~~ "ngdwwj cp"lwo dgt"f c{c"

O cpf qt" " ? $\frac{0,0004}{0,0004} \times 1 \text{ grup}$? "3"Qtcp" "

M~~gr~~ cr~~e~~"Vwncpi " ? $\frac{0,0007}{0,0004} \times 1 \text{ grup}$? "4"Qtcp" "

Vwncpi " " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$? "3: "Qtcp" "

Rgo dcpw"Vwncpi " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$? "3: "Qtcp" "

e0 M~~cr~~ cukcu'r tqf w~~nk~~"*S v~~t~~" "

Rtqf w~~nk~~h~~ku~~"r gt"qtcp" ? $\frac{1 \text{ hari}}{0,007 \text{ hari}} \times 1 \text{ kg}$

" " " " ? "364.: 79"mi "

F k~~g~~pecpcncp"lwo ncj "i twr " ? "3"i twr "

M~~cr~~ cukcu'r tqf w~~nk~~"*S v~~t~~" ? " "i twr "z"r tqf w~~nk~~h~~ku~~"

" " " " ? "3z3: i twr "z"364.: 8mi "

" " " " ? "40/93.65"mi lj ctk"

f0 Y cmw"

Y cmw" ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? $\frac{19.505 \text{ kg}}{2.571,43 \text{ kg/hari}}$? "9.7: "j ctk~~e~~" : "j ctk"

g0 Dlc{c" {cpi "f k~~g~~tnwncp"

Dlc{c" ? "xq~~n~~wo g'z"p~~k~~ckJ URM"

" " ? "3; 0/27"z"Tr 03606; : ./"

" " ? "Tr 04: 40: 50654.44"

607045 Rngntlccp"Rgpi geqtc"p"

Rngntlccp" r rngntlccp" r gpi geqtc"p" r qgt"
f kngtlcnep" o gpi i wpcnep" dgvqp" tgcfc{" o kz"
ugj kpi i c"dwwj "cnv'dgtcv'eqpetgv'r wo r "fcp'twnl"
o kzgt."ugtvc"vgpci c"o cpwuk"dgtf cuctnep"J URM"
42370' Dgtknw" cpcrkuc" J URM" 4237" Rngntlccp"
r gpi geqtc"p"r qgt"<
"

Vcdgrl603; 'PlukKJ URM4237'Uwtcdc{c/'Rngntlccp'Dgvqp'M/522"

24.03.01.10	Pekerjaan Beton K-300	m3	SNI 7394 :2008 (6.7)		
Bahan :					
20.01.01.02.01.F	Semen PC 40 Kg	10,33	Zak	63.000	650.475
20.01.01.04.04.F	Pasir Cor/Beton	0,425	m³	232.100	98.787
20.01.01.05.04.01.F	Batu Pecah Mesin ½ cm	0,537	m³	466.000	250.413
23.02.02.02.01.F	Air Kerja	215	Liter	27	5.805
				Jumlah:	1.005.481
Upah :					
23.02.04.01.01.F	Mandor	0,083	O.H	120.000	9.960
23.02.04.01.02.F	Kepala Tukang batu	0,028	O.H	110.000	3.080
23.02.04.01.03.F	Tukang Batu	0,275	O.H	105.000	28.875
23.02.04.01.04.F	Pembantu Tukang	1,65	O.H	99.000	163.350
				Jumlah:	205.265
				Nilai HSPK :	1.210.746

c0"Xqrmw g'r rngntlccp" " ?'372.; 3'o ⁵"

d0 Lwo mj 'ngdwwj cp'lwwo dgt'f c{c"

O cpf qt" " ? $\frac{0,083}{0,083} \times 1$ grup"? 3"Qtcp"i "

Mgr crē'Vwēpi " ? $\frac{0,028}{0,083} \times 1 \text{ grup}$? "3'Qtēpi "

Vwēpi " " ? $\frac{0,275}{0,083} \times 1 \text{ grup}$? "6'Qtēpi "

Rgo dēpw'Vwēpi " ? $\frac{1,65}{0,083} \times 1 \text{ grup}$? "43'Qtēpi "

e0 Rtqf wmkkēu" "

- F kēuwo ukēp" nēpf kēk' qrgtēk' crēv' fēp"
r go grēj cēcp'o gēp'fēcēo "nēpf kēk'dēkē*2.97+0'
"

Vcdgri6042'Ghēgēpuk'Qrgtēk'pēd'Crēv'fēp'Rgo grēj cēcp''

Mēpf kēk' Qrgtēk'Crēv'	Rgo grēj cēcp'Crēv'				
	Dēkēl' Ugēkēk'	Dēkēl'	Ugē cēpi "	Dwt wēl'	Dwt wēl' Ugēkēk'
Dēkēl'Ugēkēk'	2.: 5"	2.: 3"	2.98"	2.92"	2.85"
Dēkēl'	2.9: "	2.97"	2.93"	2.87"	2.82"
Ugē cēpi "	2.94"	2.8; "	2.87"	2.82"	2.76"
Dwt wēl'	2.85"	2.83"	2.79"	2.74"	2.67"
Dwt wēl'Ugēkēk'	2.74"	2.72"	2.69"	2.64"	2.54"

*iwo dgt " < Dmw' Tglgt gēk' wēwēl' Mēpē cēqē "

Dēpi wēcp'I gēwēi 'fēp'Ukēk042250J cēl'763+

- F kēuwo ukēp" Mgo cō r wēp" qrgtēvqē"
f kēvēgi qtkēp'vgtēcō r kēl'*2.: 2+0'

Vcdgri6043'Mwēkēkēk' Mēvgtēcō r kēp'Qrgtēvqē "

Mwēkēkēk'	Kē gēpēkēu"	P kēk'
Vgtēcō r kēl'	c0Rgpf kē kēp'UVO lēgf gēclēv" d0Ugt wēkēk'UO RIURR'*Kēk'fēp'cēw" e0Rgpi cēcō cp"@8222'lēcō "	2.: 2"
Ewēwē "	c0Rgpf kē kēp'UVO lēgf gēclēv" d0Ugt wēkēk'UO RIURR'*Kēk'fēp'cēw" e0Rgpi cēcō cp"6222'6'8222'lēcō "	2.92"
Ugē cēpi "	c0Rgpf kē kēp'UVO lēgf gēclēv"	2.87"

	dUgtwlnuk'UO RIURR"K'f cp'cvcw' eORgpi cmo cp"4222"o"6222"lco "	
Mmtcpi "	cORgpf kf kncp"UVO hgf gtelev' dUgtwlnuk'f cp'cvcw' eORgpi cmo cp">"5222"lco "	2.72"

*mo dgt " <" Dmw" T ght gpuk" wpmn' Mqptcmqt "

Dcpi wpcp'I gf wpi 'f cp'Uk-k02250J cn764+

- F lcuwo ukncp'hqpf k'ewcec"Vgtcpi ."Ugi ct "2.; 2+0"

Vcdg16044'Mqpf k'ewcec"

Mqpf k'ewcec"	Hmqt"	
	O gpkvlco "	' "
Vgtcpi ."Ugi ct "	77 82"	2.; 2"
Vgtcpi ."Rpcu."Dgtf gdw'	72 82"	2.; 5"
O gpf wpi "	67 82"	2.97"
I gnr "	62 82"	2.88"

*mo dgt " <" Dmw" T ght gpuk" wpmn' Mqptcmqt "

Dcpi wpcp'I gf wpi 'f cp'Uk-k02250J cn764+

- Qwr w'r knqp'ukf g'f ctk'eqpetgvr'wo r "
- ? "334"o⁵ lco "mo dgt "<"dtquw"eqpetgvr'wo r +"
- ? "334"o⁵ lco "z"2.97"z"2.: "z"2.; "? "82.6: "o⁵ lco "
- Lwo rcj " twn' o kzt " *ncr cukcu" 9" o⁵+" { cpi " f kdwwj ncp"<
- tven'o kzt " ? " $\frac{\text{Volume}}{\text{kapasitas mixer}}$ " ? $\frac{150,91 \text{ m}^3}{7 \text{ m}^3}$ "
- "" ? "43.8"é"44"tven'
- Rtqf wmk'ku'r gt"j ctk'
- ? " $\frac{\text{Volume}}{\text{banyak hari}}$ " ? $\frac{150,91 \text{ m}^3}{6 \text{ hari}}$ " ? "47.37"o⁵ lj ctk'
- Dcp{cn'tven'o kzt'r gt"j ctk'
- ? " $\frac{\text{Produktifitas}}{\text{kapsitas mixer}}$ " ? $\frac{25,15 \text{ m}^3/\text{hari}}{7 \text{ m}^3}$ "
- ? "5.7; "é"6"tvenlj ctk'

f0 Y cmw'

- Y cmw'r gtulcr cp "3+"
 Rgpi cwtcp'r quuk' ? "32"o gpk'
 Rgo cucpi cp'r kr c' ? "52"o gpk'
Krg'twen'lo kz gt ? "32"o gpk'
 " " " ? "72"o gpk'
 - Y cmw'qr gtcukqpcn "4+"

$$? \frac{\text{Volume}}{\text{output concrete pump}} \frac{150,91 \text{ m}^3}{60,48 \text{ m}^3 / \text{jam}} \times 60 \text{ ""}$$
 ? "36; .934"o gpk'
 - Y cmw'co dcj "5+"
 Rgpti cpvkcp'twen' ? "32"o gpk'
Wk'uno r " " ? ""7"o gpk'
 " " " ? "37"o gpk'
 - Y cmw'r cucc'r grncupccp "6+"
 Rgo dgtulj cp'r qo r c' ? "32"o gpk'
 Rgo dqpi nctcp'r kr c' ? "52"o gpk'
Rgtulcr cp'ngo dcrk' ? "32"o gpk'
 " " " ? "72"o gpk'
 - Vqverly cmw"
 ? ""4"- "3"- "5"- "6+"z" tven'lo kz gt"
 ? "36; .934"o gpk'- "72"o gpk'- "37"o gpk'- ""72"
 o gpk+z "44"tven"
 ? "489; .934o o gpk"182"o gpk"
 ? "66.884"lco "I": "lco "ngt lc"
 ? "7.7: "j ctk'é "8"j ctk'
- g0 Dlc{c" { cpi "f kr gtnwncp"
- Dlc{c"dgwqp"
 Dlc{c"? "xqmo g"z"pkck"J URM"
 " ? "372.; 3"o "z"Tr 00432068./"
 " ? "Tr 03: 4035038.2; "
 - Dlc{c"ugy c"crv"? "Tr 09022022./152"o "5"
 "Uwo dgt"<RV0Xctk"Wucj c"Dgwqp+"

Wpwnir gt "o⁵? "Tr 04550555./"

? "Tr 04550555./"z "372.; 3"o⁵"

? "Tr 05704340555./"

- Vqcn'dkc {c"

? "Dkc {c"- "Dkc {c"ugy c"crv"

? "Tr 03: 4035038.2; "- "Tr 05704340555/"

? "Tr 04390 4806; ./"

60/0406 Rngtllccp "Rgo dqpi netcp "Dgnkupi "

Rngtllccp "r go dqpi netcp "dgnkupi "r qgt"
f kngtlenep" f gpi cp" o go dqpi net" dgnkupi "
r qgt0' F ko cpc" f crco " ucw" i twr " vgtf k' f ctk"
O cpf qt" f cp" r go dcpw' wnepi 0' " Cpcrkuc"
r gtj kwpi cp" f vtcuk' r go dqpi netcp" dgnkupi "
o gpi i wpcnep" cpcrkuc" ectc" o qf gtp" f ctk' dwnw"
Uqgf tclcv0' *3; ; 6-0' Cpcrkuc" *ectc" o qf gtp-"
cpi i ctep" dkc {c "r grmcpcpp. "ugr gt v' dgt knw" <

Vcdgdi6045' Lco 'ngtlic' dgnkupi 'lcr 'hwcup' 32' b 4"

P q0'	Igpku'Egvenep" Mc {w"	Lco 'ngtlic' ugler 'hwcup' 32' b 4"			
		O gp {gvgf"	O go cucpi "	O go dwne' fcp" O go dgtukj nep"	Tgr etcuk'
3"	Rqpf cukr cpi m cn'lgo dcvp"	5/9"	4/6"	4/6"	4/7"
4"	F kpf lpi "	7/; "	5/7"	4/7"	4/7"
5"	Ncpvck'	5/: "	4/6"	4/6"	4/7"
6"	Cvr "	5/; "	4/7"	4/6"	4/7"
7"	Vlcp i "	6/: "	4/6"	4/6"	4/7"
8"	Mgr crv "Vlcp i "	7/33"	5/9"	4/7"	4/7"
9"	Dcmqmdcmqni'	8/32"	5/6"	4/7"	4/7"
: "	Vcpi i c/ vcpi i c"	8/34"	6/: "	5/7"	4/7"
; "	Uwf w'vlcp i " f cp'dcmqni' dgtwnk "	7/33"	5/; "	5/7"	4/7"

P q0	Lgplu'Egvcnep" Mc{w'	Lco 'ngtlc'ugvkr 'hucu'egvcnep'32'o 4"			
		O gp{gvgn'	O go cucpi "	O go dwnc'fcp" O go dgtulj nep"	Tgr ctuk'
32"	Co depi " lgpf gr'fcp" npvgn'	7/32"	5/8"	5/7"	4/7"

c0 Xqno g'r gngtlccp" " ? "4: : .6; "o 4"

d0 Lwo ncj " ngdwwj cp" uwo dgt" fc{c" *uguwck' uccv'
r go cucpi cp"dgnkukpi 'r qgt+ "

O cpf qt" " ? $\frac{0,026}{0,026} \times 1 \text{ grup}?$ "3"Qtcp" "

Mcr crn'Vwncpi " ? $\frac{0,026}{0,026} \times 1 \text{ grup}?$ "3"Qtcp" "

Vwncpi " " ? $\frac{0,260}{0,026} \times 1 \text{ grup}?$ "32"Qtcp" "

Rgo dcpw'Vwncpi " ? $\frac{0,52}{0,026} \times 1 \text{ grup}?$ "42"Qtcp" "

e0 Mcr cukcu'r tqf wmk'*S v'" " "

Uguwck' f gpi cp" wdgri 6045. "dcj y c" lco "ngtlc" wpwni'
o go dwnc'fcp" o go dgtulj nep"egvcnep"cf crnj "ugmco c"
4/6'lco "fki wpcncp'4'lco "t32'o 4"dgnkukpi +0"

f0 Y cmw'

Y cmw? $\frac{\text{Volume}}{10 \text{ m}^2} \times 2 \text{ jam}''$

""""? $\frac{288,49 \text{ m}^2}{10 \text{ m}^2} \times 2 \text{ jam}?$ "79.8; : 'lco 'é': 'j ctk'

g0 Rtqf wmkxkcu"

Rtqf wmkxkcu"? $\frac{\text{volume}}{\text{durasi}} = \frac{288,49 \text{ m}^2}{8 \text{ hari}}$
? "58.28'o 4Tj ctk'

60705 Rngntlccp"Urqh"

60708 Rngntlccp"Dgnkupi "

Rngntlccp"rngntlccp" dgnkupi "urqh"
 fngtlccp" f gpi cp" dcj cp" o wmk rgnl" fcp"
 o gpi i wpcnep" vpci c" o cpwuk0' Fko cpc"
 f crco "ucw"i twr "vgtf k'f etk'O cpf qt."ngr crc"
 wncpi ." wncpi ." fcp" r go dcpw' wncpi 0'
 Dgtknw' cpcnkuc" J URM" 4237" Rngntlccp"
 dgnkupi "urqh"Vcdgn6089'P kckJ URM4237"
 Uwcde{c/"Rngntlccp"Dgnkupi "Urqh"
 "
 "

24.03.01.17	Pekerjaan Bekesting Sloof	m2	SNI 7394 :2008 (6.21)		
Upah :					
23.02.04.01.01.F	Mandor	0,026	O.H	120.000	3.120
23.02.04.01.02.F	Kepala Tukang Kayu	0,026	O.H	110.000	2.860
23.02.04.01.03.F	Tukang Kayu	0,26	O.H	105.000	27.300
23.02.04.01.04.F	Pembantu Tukang	0,52	O.H	99.000	51.480
				Jumlah:	84.760
Bahan:					
20.01.01.43.04.06.F	Kayu meranti bekesting	0,045	m3	3.200.000	144.000
20.01.01.28.04.04.F	Paku usuk	0,3	Kg	22.000	6.600
20.01.02.01.06.F	Manyak bekesting	0,1	liter	28.300	2.830
				Jumlah:	153.430
				Nilai HSPK :	238.190

c0 Xqrno g"rngntlccp" " ?"592.: : "o 4"

d0 Lwo ncj "ngdwwj cp"lwo dgt"f c{c"

- O c p f q t " " ? $\frac{0,026}{0,026} \times 1 \text{ grup}$? "3"Q t c p i " "
- M g r c r c " V w n e p i " ? $\frac{0,026}{0,026} \times 1 \text{ grup}$? "3"Q t c p i " "
- V w n e p i " " ? $\frac{0,260}{0,026} \times 1 \text{ grup}$? "32"Q t c p i " "
- R g o d c p w " V w n e p i " ? $\frac{0,52}{0,026} \times 1 \text{ grup}$? "42"Q t c p i " "
- e0 M c r c u k c u " r t q f w m k " * S v + " " ? $\frac{1 \text{ hari}}{0,52 \text{ hari}} \times 1 \text{ m}^2$ "
- R t q f w m k k c u " r g t " q t c p i " ? "3.; 45"o 4" "
- " " " " ? "4"i t w r " ? "4"i t w r " "
- F k t g p e c p c n e p " l w o n j " i t w r " ? "4"i t w r " "
- M c r c u k c u " r t q f w m k " * S v + " ? " i t w r " z " r t q f w m k k c u " "
- " " " " ? "4242+ i t w r " z "3.; 45"o 4" "
- " " " " ? "98.; 45"o 4" j c t k " "
- " " " " ? "98.; 45"o 4" j c t k " "
- f0 Y c m w " ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "
- Y c m w " ? $\frac{370,88 \text{ m}^2}{76,923 \text{ m}^2/\text{hari}}$? "6.: "j c t k É "7"j c t k " "
- g0 D l c { c " { c p i " f k r g t w n e p " ? "x q r w o g " z " p k r k " J U R M " "
- F k c u w o u k n e p " d g n k u k p i " f k i w p c n e p " u g d c p { c m " 4 z " ? "592.: : "o 4"z "T r 045: Ø; 2./" "
- r g o c n e k c p 0 U g j k p i i c " r c f c " r g p i i w p c c p " h g f w c " h e n k p { c " ? "T r 0: : Ø620 89.37" "
- f k c o d c j "47" " p { c " ? "T r 0: : Ø620 89.37"z "97" " "
- D l c { c " " ? "x q r w o g " z " p k r k " J U R M " ? "T r 0880477047.58" "
- " " ? "592.: : "o 4"z "T r 045: Ø; 2./" "
- " " ? "T r 0: : Ø620 89.37" "
- F k i w p c n e p "4" h e n k " ? "D l c { c " z "97" " ? "T r 0: : Ø620 89.37"z "97" " "
- " " ? "T r 0: : Ø620 89.37"z "97" " "
- " " ? "T r 0880477047.58" "

607504 Rngntlccp"Rgo dgukcp"

Rngntlccp" r rngntlccp" r go dgukcp" unqhq"
 f kngtlcnep"f gpi cp"dcj cp"dgu'wkt"f cp"r qmqu'ugt c"
 o gpi i wpcnep" vpci c" o cpwuk" wpmwn'
 r go cucpi cpp{c0'F ko cpc"f crco "ucw"i twr "vgtf ktk'
 f ctK'O cpf qt.'hgr crc'wnepi .'wnepi .'f cp'r go dcpw"
 wnepi 0' Dgtknw" cpcrkc" J URM" 4237" Rngntlccp"
 r go dgukcp"unqhq"*Vcdgn' 608: " P kck' J URM" 4237"
 Uwtcdc{c" /" Rngntlccp" r go dgukcp" f gpi cp" Dguk'
 Dgwpq"r qmqu'wkt + "<
 "

24.03.01.14	Pekerjaan Pembesian dengan Besi Beton (ulir/polos)	kg	SNI 7394 :2008 (6.17)		
Upah :					
23.02.04.01.01.F	Mandor	0,0004	O.H	120.000	48
23.02.04.01.02.F	Kepala Tukang besi	0,0007	O.H	110.000	77
23.02.04.01.03.F	Tukang Besi	0,007	O.H	105.000	735
23.02.04.01.04.F	Pembantu Tukang	0,007	O.H	99.000	693
Jumlah:				1.553	
Bahan:					
20.01.01.09.01.01.F	Besi Beton (polos) d 10 mm	1,05	Kg	12.000	12.600
20.01.01.35.02.01.F	Kawat Beton	0,015	kg	23.000	345
Jumlah:				12.945	
Nilai HSPK :				14.498	

c0 Xqno g'r rngntlccp" " ? "34045; .3: "ni "

d0 Lwo rcj 'ngdwwj cp'uwo dgt'f c{c"

O cpf qt" " ? $\frac{0,0004}{0,0004} \times 1 \text{ grup}$? "3"Qtcp" "

Mgr crc "Vwncpi " ? $\frac{0,0007}{0,0004} \times 1 \text{ grup} ? "4 "Qtcpi "$

Vwncpi " " ? $\frac{0,007}{0,0004} \times 1 \text{ grup} ? "3: "Qtcpi "$

Rgo dcpw "Vwncpi " ? $\frac{0,007}{0,0004} \times 1 \text{ grup} ? "3: "Qtcpi "$

e0 Mcr cukcu'r tqf wmk "S v+" " "

Rtqf wmk "kcu'r gt "qtcpi " ? $\frac{1 \text{ hari}}{0,007 \text{ hari}} \times 1 \text{ kg} "$

" " " " ? "364.: 79 "mi "

F kgpcpcncp "lwo ncj "i twr " ? "3 "i twr "

Mcr cukcu'r tqf wmk "S v+" ? " "i twr "z "r tqf wmk "kcu'r "

" " " " ? "3Z3: -i twr "z "364.: 8mi "

" " " " ? "40793.65 "mi lj ctk "

f0 Y cmw "

Y cmw " ? $\frac{\text{Volume}}{\text{Kapasitas produksi}} "$

" " ? $\frac{12.239,18 \text{ kg}}{2.571,43 \text{ kg/hari}} ? "6.98 "j ctk \text{é} "7 "j ctk "$

g0 Dlc {c " {cpi "f k gtnwncp "

Dlc {c " ? "xqno g "z "pkck "J URM "

" " ? "34045; .3: "z "Tr 03606; : ./ "

" " ? "Tr 039906650878.4; ./ "

60705 Rngtlccp "Rgpi geqtcp "

Rngtlccp "r rngtlccp "r gpi geqtcp "unqh "
f lngtlcncp " o gpi i wpcncp " dgvp " tgef { " o k "
ugj lpi i c "dwwj "crv/dgtcv/eqpet gvr wo r "f cp "twni "
o kzgt. "ugt "vgpci c "o cpwuk "dgtf cuctncp "J URM "
42370 "Dgtknw "cpcrkuc " J URM "4237 "Rngtlccp "
r gpi geqtcp "unqh " "Vcdgn "60; "P kck "J URM "4237 "
Uwcdc {c " / "Rngtlccp "Dgvp "M/522 + " " "

Bahan :					
20.01.01.02.01.F	Semen PC 40 Kg	10,33	Zak	63.000	650.475
20.01.01.04.04.F	Pasir Cor/Beton	0,425	m³	232.100	98.787
20.01.01.05.04.01.F	Batu Pecah Mesin ½ cm	0,537	m³	466.000	250.413
23.02.02.02.01.F	Air Kerja	215	Liter	27	5.805
Jumlah:					1.005.481
Upah :					
23.02.04.01.01.F	Mandor	0,083	O.H	120.000	9.960
23.02.04.01.02.F	Kepala Tukang batu	0,028	O.H	110.000	3.080
23.02.04.01.03.F	Tukang Batu	0,275	O.H	105.000	28.875
23.02.04.01.04.F	Pembantu Tukang	1,65	O.H	99.000	163.350
Jumlah:					205.265
Nilai HSPK :					1.210.746

c0 Xqrwō g'r gngtlccp" " ? "74.39"o⁵"

d0 Lwo mĵ 'ngdwwĵ cp'ūwo dgt'f c{c"

O cpf qt" " ? $\frac{0,083}{0,083}$ 1 grup"? "3"Qtcpī "

Mġr cr'Vwncpī " ? $\frac{0,028}{0,083}$ 1 grup"? "3"Qtcpī "

Vwncpī " " ? $\frac{0,275}{0,083}$ 1 grup"? "6"Qtcpī "

Rgo dcpw'Vwncpī " ? $\frac{1,65}{0,083}$ 1 grup"? "43"Qtcpī "

"

e0 Rtqf wmkkcū" " "

- Fkūwo ukncp" nūpf kŭk' qrgtcuk' crv' fcp"
r go grĵ ctccp"o gŭp"fcro "nūpf kŭk'dcŭn' *2.97+ "
*Vcdgŭn' 6042" Gŭkŭpuk' Qrgtcukpcŭn' Crv' fcp"
Rgo grĵ ctccp-0'

Mqpf kuk' Qr gtcuk'Crev'	Rgo grkj ctcep'Crev'				
	Dckni' Ugnerk'	Dckni'	Ugf cpi "	Dwtwni'	Dwtwni' Ugnerk'
Dckni'Ugnerk'	2.: 5"	2.: 3"	2.98"	2.92"	2.85"
Dckni'	2.9: "	2.97"	2.93"	2.87"	2.82"
Ugf cpi "	2.94"	2.8; "	2.87"	2.82"	2.76"
Dwtwni'	2.85"	2.83"	2.79"	2.74"	2.67"
Dwtwni'Ugnerk'	2.74"	2.72"	2.69"	2.64"	2.54"

*imo dgt " <' Dmw" Tghgt gpuk' wpmni' Mqpv cmqt "

Dcpi wpcp'I gf wpi 'f cp'Uk-k042250J cni763+

- F kcuwo uknep" Mgo co r wcp" qr gtcvqt "
f knegvi qtknep" vgtco r kni' *2.: 2+" *Vcdgni' 6043"
Mxcrkhnek'Mvgvtco r knep"Qr gtcvqt0'

Mxcrkhnek'	K gpvksu'	P knck'
Vgtco r kni'	c0Rgpf kf knep'UVO lufg gteclv' d0Ugtvknep'UO RIUKR'Kf cp'cvcw' e0Rgpi cico cp"@8222'lco "	2.: 2"
Ewmr "	c0Rgpf kf knep'UVO lufg gteclv' d0Ugtvknep'UO RIUKR'Kf cp'cvcw' e0Rgpi cico cp'6222'6'8222'lco "	2.92"
Ugf cpi "	c0Rgpf kf knep'UVO lufg gteclv' d0Ugtvknep'UO RIUKR'Kf cp'cvcw' e0Rgpi cico cp"4222'6'6222'lco "	2.87"
Mwtcpi "	c0Rgpf kf knep'UVO lufg gteclv' d0Ugtvknep'UO RIUKR'Kf cp'cvcw' e0Rgpi cico cp">5222'lco "	2.72"

*imo dgt " <' Dmw" Tghgt gpuk' wpmni' Mqpv cmqt "

Dcpi wpcp'I gf wpi 'f cp'Uk-k042250J cni764+

- F kcuwo uknep"mqpf kuk'ewcec"Vgtcpi ."Ugi ct"*2.; 2+"
*Vcdgni'6044'Mqpf kuk'Ewcec-0'

Mqpf kuk'Ewcec"	Hcmqt"	
	O gpkvllco "	' "
Vgtcpi ."Ugi ct"	77 82"	2.; 2"
Vgtcpi ."Repcu."Dgtf gdw'	72 82"	2.: 5"
O gpf wpi "	67 82"	2.97"

Mqpf kuk'Ewcec"	Hemqt"	
	O gpkllco "	' "
I gner "	62 l82"	2.88"

**uwo dgt " < " Dmw" T glgt gpiuk" wpmw' Mqpytcmqt "*

Dcpi wpcp'I gf wpi 'f cp'Ukr k042250J cn764+ "

- Qwr w'r kwp'ukf g'f ctk'eqpetgvg'r wo r "
- ? "334"o ⁵llco "uwo dgt "dtquw"eqpetgvg'r wo r +"
- ? "334"o ⁵llco "z"2.97"z"2.: "z"2.; "? "82.6: "o ⁵llco "
- Lwo rcj " twm' o kzgt " *ner cukcu" 9" o ⁵+ " { cpi "
- f kdwvj nep "<
- twen'o kzgt " ? " $\frac{\text{Volume}}{\text{kapasitas mixer}} \text{ " } \frac{52,17 \text{ m}^3}{7 \text{ m}^3} \text{ "}$
- " ? "9.67"é": "twen'
- Rtqf wmkhcu'r gt 'j ctk'
- ? " $\frac{\text{Volume}}{\text{banyak hari}} \text{ " } \frac{52,17 \text{ m}^3}{2 \text{ hari}} \text{ " } 48.2; \text{ "o } ^5 \text{ j ctk'}$
- Dcp{ cn'twen'o kzgt 'r gt 'j ctk'
- ? " $\frac{\text{Produktifitas}}{\text{kapsitas mixer}} \text{ " } \frac{26,09 \text{ m}^3/\text{hari}}{7 \text{ m}^3} \text{ "}$
- ? "5.95"é "6"twen'j ctk'

f0 Y cmw'

- Y cmw'r gtuker cp "3+ "
- Rgpi cwtcp'r quuk" ? "32"o gpkv"
- Rgo cucpi cp'r krc" ? "52"o gpkv"
- Krg'twen'o kzgt " ? "32"o gpkv"
- " " " ? "72"o gpkv"
- Y cmw'qr gtuker pcn "4+ "
- ? " $\frac{\text{Volume}}{\text{output concrete pump}} \text{ " } \frac{52,17 \text{ m}^3}{60,48 \text{ m}^3/\text{jam}} \times 60 \text{ "}$
- ? "73.978"o gpkv"
- Y cmw'co dcj "5+ "
- Rgpti cp'kcp'twen' ? "32"o gpkv"
- Wk'umo r " " ? "7"o gpkv"

- " " " ?'37'o gpkv'
- Y cmw'r cuez'r grncupccp'*6+
 Rgo dgtulj cp'r qo r c" ?'32'o gpkv'
 Rgo dqpi netcp'r kr c" ?'52'o gpkv'
Rgtukr cp'ngo dcrk ?'32'o gpkv'
 " " " ?'72'o gpkv'
 - Vqverly cmw'
 ?'v4- '*v3- 'v5- 'v6+'z" vtenlo kz gt"
 ?'73.978"o gpkv'- '*72"o gpkv'- '37"o gpkv'- ""72"
 o gpkvz": 'vtenl"
 ?'; 93.978"o gpkv'182"o gpkv'
 ?'38.3; 8'lco 'T': 'lco 'ngtlc"
 ?'4.246j ctk'e '4j ctk'
- g0 Dlc{c"{cpi 'fkr gtwnep"
- Dlc{c'dgwp""
 Dlc{c"" ?'xqno g'z'pkrckJ URM'
 " " ?'74.39"o ⁵z"Tr 08032068./"
 " " ?'Tr 0850860853.8; "
 - Dlc{c'ugy c'crv"? 'Tr 09022022./152"o ⁵"
 *Uwo dgt"<RV0Xctlc'Wicj c'Dgwp+
 Wpwnlr gt'o ⁵?"Tr 0455055./"
 ?'Tr 0455055./"z"74.39"o ⁵"
 ?'Tr 0340895022./"
 - Vqverldlc{c"
 ?'Dlc{c"- 'Dlc{c'ugy c'crv"
 ?'Tr 0850860853.8; "- 'Tr 0340895022./"
 ?'Tr 0970590853.8; "
- 60706 Rngtllccp'Rgo dqpi netcp'Dgnukpi "
- Rngtllccp'r go dqpi netcp'dgnukpi 'unqgh'
 f kngtlenep" f gpi cp" o go dqpi net" dgnukpi "
 r qgt0 F lo cpc" f crco " ucw" i twr " vgtfk k' f ctk'
 O cpf qt. "ngr crc"wnepi . "wnepi "f cp"r go dcpw"

wnēpi 0' " Cperkuc" r gtj kwpi cp" f wtuk'
 r go dqpi nētep"dgntukpi "o gpi i wpcnēp"cpērkuc"
 ectc" o qf gtp" f ctk' dwnw" Uqgf telew0' *3; ; 6+0'
 Cperkuc" *ectc" o qf gtp+" cpi i ctep" dk{c"
 r grmcpccp. 'ugr gt'kdgtknw"<

Vedgi6046'Leo 'ngtlc'dgnukpi 'lcr 'hwēcp'32'b 4"

P q0'	Igpku'Egcnēp" Mc{w"	Leo "ngtlc'uglcr 'hwēu'egcnēp'32'o 4"			
		O gp{ggn"	O go cucpi "	O go dwnē'fcp" O go dgtukj nēp"	Tgr ctuk'
3"	Rqpf cukr cpi m cnlgo devp"	5/9"	4/6"	4/6"	4/7"
4"	F lpf lpi "	7/; "	5/7"	4/7"	4/7"
5"	Ncpvk'	5/: "	4/6"	4/6"	4/7"
6"	Cxcr "	5/; "	4/7"	4/6"	4/7"
7"	Vlēpi "	6/: "	4/6"	4/6"	4/7"
8"	Mgr cr'Vlēpi "	7/33"	5/9"	4/7"	4/7"
9"	Denqndēqni'	8/32"	5/6"	4/7"	4/7"
: "	Vcpi i c/ vcpi i c"	8/34"	6/: "	5/7"	4/7"
; "	Uwf w'vlēpi " f cp'dēqni' dgtwnk"	7/33"	5/; "	5/7"	4/7"
32"	Co dcpi " lgpf gr'fcp" nēpyn'	7/32"	5/8"	5/7"	4/7"

c0 Xqno g'r gngtlēcp" " ? "592.: : "o 4"

d0 Lwo rēj "ngdwwj cp'uwo dgt'f c{c"

O cpf qt" " ? $\frac{0,026}{0,026} \times 1$ grup"? "3"Qtēpi "

Mgr cr'Vwnēpi " ? $\frac{0,026}{0,026} \times 1$ grup"? "3"Qtēpi "

Vwnēpi " " ? $\frac{0,260}{0,026} \times 1$ grup"? "32"Qtēpi "

Rgo dcpw'Vwnēpi " ? $\frac{0,52}{0,026} \times 1$ grup"? "42"Qtēpi "

e0 Mcr cukcu'r tqf wmk' *S v+'' "

Uguwckf gpi cp'vcdgn6045.'dcj y c'lco 'hgtlc'wpwnb go dwne"
f cp" o go dgtukj nep" egvncp" cf crxj " ugrco c" 4/6" lco " *"
f ki wpcncp"4'lco "T32"o 4"dgnukpi +0"

f0 Y cmw'

$$Y \text{ cmw}' ? \frac{\text{Volume}}{10 \text{ m}^2} \times 2 \text{ jam}'$$

$$" ? \frac{370,88 \text{ m}^2}{10 \text{ m}^2} \times 2 \text{ jam}' ? 96.398' \text{lco} \text{'é} 32' \text{j} \text{ ctk}'$$

g0 Rtqf wmkxkcu"

$$\text{Rtqf wmkxkcu}' ? \frac{\text{volume}}{\text{durasi}} = \frac{370,88 \text{ m}^2}{10 \text{ hari}} ? 59.2 : : \text{'o} 4 \text{I} \text{j} \text{ ctk}'$$

60706 Rngntlccp'Mqmqo 'f cp'Dgvqp'Htco g'Rlpw'Wco c"

607060 Rngntlccp'Dgnukpi "

Rngntlccp'r rngntlccp'dgnukpi 'hmqo 'f cp"
dgvqp" htco g" r lpw' wco c" f lngtlcncp" f gpi cp"
dcj cp" o wmkrgmu" f cp" o gpi i wpcncp" vgcpi c"
o cpwuk0F ko cpc" f crco "ucw"i twr "vgtf kkk' f ctk"
O cpf qt. "ngr crw" wncpi . "wncpi . "f cp"r go dcpw"
wncpi 0'Dgtknw" cpcrkuc" J URM'4237" Rngntlccp"
dgnukpi "hmqo "<

Vcdgn6047'P lckJ URM'4237'Uwtcdc{ c'/'Rngntlccp'Dgnukpi 'Mqmqo "

24.03.01.18	Pekerjaan Bekesting Kolom	m2	SNI 7394 :2008 (6.22)		
<u>Upah :</u>					
23.02.04.01.01.F	Mandor	0,033	O.H	120.000	3.960
23.02.04.01.02.F	Kepala Tukang Kayu	0,033	O.H	110.000	3.630
23.02.04.01.03.F	Tukang Kayu	0,33	O.H	105.000	34.650
23.02.04.01.04.F	Pembantu Tukang	0,66	O.H	99.000	65.340
Jumlah:				107.580	

Bahan:					
20.01.01.43.04.06	Kayu meranti	0,04	m3	3.200.000	128.000
.F	bekesting				
20.01.01.28.04.04		0,4	Kg	22.000	8.800
.F	Paku usuk				
20.01.02.01.06.F	Manyak	0,2	liter	28.300	5.660
	bekesting				
20.01.01.43.03.04	kayu Kamper	0,015	m3	6.400.000	96.000
.F	balok 3/5				
20.01.01.34.02.F	Plywood tebal	0,35	lembar	93.600	32.760
	9 mm				
Jumlah:					271.220
Nilai HSPK :					378.800

c0 Xqmw g'r gngtlccp" " ? "6: : .362"o 4"

d0 Lwo rcj 'ngdwwj cp'lw0 dgt'f c { c"

O cpf qt" " ? $\frac{0,033}{0,033} \times 1 \text{ grup}$? "3"Qtcpi "

Mgr crc'Vwncpi " ? $\frac{0,033}{0,033} \times 1 \text{ grup}$? "3"Qtcpi "

Vwncpi " " ? $\frac{0,33}{0,033} \times 1 \text{ grup}$? "32"Qtcpi "

Rgo dcpw'Vwncpi " ? $\frac{0,66}{0,033} \times 1 \text{ grup}$? "42"Qtcpi "

e0 Mcr cukcu'r tqf wmk'S v'" " "

Rtqf wmkku'r gt'qtcpi " ? $\frac{1 \text{ hari}}{0,66 \text{ hari}} \times 1 \text{ m}^{2''}$

" " " " ? "3.737"o 4"

F ktgpecpcncp'lwo rcj 'i twr " ? "4'i twr "

Mcr cukcu'r tqf wmk'S v'" ? " 'i twr 'z'r tqf wmkku'"

" " " " ? "4z42+i twr 'z'3.737"o 4"

" " " " ? "82.828"o 4j ctk"

f0 Fwtuk' ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? $\frac{488,140 \text{ m}^2}{60,606 \text{ m}^2/\text{hari}}$ "? ".276"j ctké": "j ctk"

g0 Dlc{c" {cpi "f k r g t n w n e p"
 F k u w o u k n e p" d g n k u k p i " f k i w p c n e p" u g d c p { c n i' 4 z"
 r g o c n e k c p 0 U g j k p i i c' r c f c' r g p i i w p c c p' h g f w c' h e n k p { c"
 f k c o d e j '47' 'p { c"
 Dlc{c" " ? "x q n w o g' z' p k r c k' J U R M"
 " " " ? '6: : .362" o ⁴ "z' T r 045: Ø; 2./"
 " " " ? 'T r 03: 6Q 29Ø23.92"
 F k i w p c n e p' 4' h e n k' ? 'Dlc{c' z' 97' "
 " " " ? 'T r 03: 6Q 29Ø23.92' z' 97' "
 " " " ? 'T r 035: Ø: 20/73.49"

60/604 R g n g t l c c p' R g o d g u k c p"

R g n g t l c c p" r g n g t l c c p" r g o d g u k c p" n q m q o " f c p"
 d g v q p' h t c o g' r k p w' w c o c" f k n g t l c n e p' f g p i c p' d e j c p"
 d g u k' w k' " f c p" r q m u' u g t v c" o g p i i w p c n e p" v g p c i c"
 o c p w u k' w p w n i' r g o c u c p i c p p { c 0' F k o c p c" f c r o "
 u c w' i t w r " v g f k k' f c t k' O c p f q t." n g r c r c" w n e p i ."
 w n e p i . " f c p" r g o d e p w' w n e p i 0' D g t k n w' c p e r k u c"
 J U R M' 4237" R g n g t l c c p" r g o d g u k c p" n q m q o " f c p"
 d g v q p' h t c o g' r k p w' w c o c" * V e d g n i' 6 Ø: " P k r c k' J U R M'
 4237' U w t c d c { c' /' R g n g t l c c p' r g o d g u k c p' f g p i c p' D g u k'
 D g v q p' * r q m u l w k + " " <

24.03.01.14	Pekerjaan Pembesian dengan Besi Beton (ulir/polos)	kg	SNI 7394 :2008 (6.17)		
Upah :					
23.02.04.01.01.F	Mandor	0,0004	O.H	120.000	48
23.02.04.01.02.F	Kepala Tukang besi	0,0007	O.H	110.000	77
23.02.04.01.03.F	Tukang Besi	0,007	O.H	105.000	735
23.02.04.01.04.F	Pembantu Tukang	0,007	O.H	99.000	693
Jumlah:					1.553

Bahan:					
20.01.01.09.01.01 .F	Besi Beton (polos) d 10 mm	1,05	Kg	12.000	12.600
20.01.01.35.02.01 .F	Kawat Beton	0,015	kg	23.000	345
Jumlah:				12.945	
Nilai HSPK :				14.498	

c0 Xqno g'r gngtlccp" ? "320422.: 9"mi "

d0 Lwo ncj 'ngdwwj cp'lw0 dgt'f c{ c"

O cpf qt" " ? $\frac{0,0004}{0,0004} \times 1 \text{ grup}$? "3"Qtcp i "

Mgr cr'Vwncpi " ? $\frac{0,0007}{0,0004} \times 1 \text{ grup}$? "4"Qtcp i "

Vwncpi " " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$? "3: "Qtcp i "

Rgo dcpw'Vwncpi " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$? "3: "Qtcp i "

e0 Mcr cukcu'r tqf wmk'S v'" " "

Rtqf wmk'kcu'r gt'qtcp i " ? $\frac{1 \text{ hari}}{0,007 \text{ hari}} \times 1 \text{ kg}$

" " " " ? "364.: 79"mi "

F kgpecpcncp'lwo ncj 'i twr " ? "3'i twr "

Mcr cukcu'r tqf wmk'S v'" ? " 'i twr 'z'r tqf wmk'kcu'r

" " " " ? "3z3: +i twr 'z'364.: 8mi "

" " " " ? "40793.65"mi lj ctk"

f0 Y cmw'

Y cmw' ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? $\frac{10.200,87 \text{ kg}}{2.571,43 \text{ kg/hari}}$? "5.: 9"j ctk'6"j ctk"

g0 Dlc{c{cpi 'fkr gtrwncp"

Dlc{c" ? "xqno g'z'pkck'J URM"

" " ? "320422.: 9'z'Tr 03606; : ./"

" " ?'Tr 03690 ; 4087: .47"

607065 Rngntlccp"Rgpi geqtcP"

Rngntlccp" r rngntlccp" r gpi geqtcP" nqmqo " fcp" dgvp" hco g" r kpw" wco c" f kngtlcncp" o gpi i wpncp"dgvp'tgcf { 'o kz'ugj kpi i c'dwwj 'crv' dgtcv'eqpetgv'r wo r "fcp'twn'lo kzgt."ugtvc'vgpci c" o cpwukc"dgtf cuctncp"J URM'42370'Dgtknw'cpcnkuc" J URM'4237"Rngntlccp" r gpi geqtcP" nqmqo " *Vcdgn' 608; 'P kckJ URM'4237'Uwtcdc { c/"Rngntlccp"Dgvp" M/522+"

24.03.01.10	Pekerjaan Beton K-300		m3	SNI 7394 :2008 (6.7)	
<u>Bahan :</u>					
20.01.01.02.01.F	Semen PC 40 Kg	10,33	Zak	63.000	650.475
20.01.01.04.04.F	Pasir Cor/Beton	0,425	m³	232.100	98.787
20.01.01.05.04.01.F	Batu Pecah Mesin ½ cm	0,537	m³	466.000	250.413
23.02.02.02.01.F	Air Kerja	215	Liter	27	5.805
				Jumlah:	1.005.481
<u>Upah :</u>					
23.02.04.01.01.F	Mandor	0,083	O.H	120.000	9.960
23.02.04.01.02.F	Kepala Tukang batu	0,028	O.H	110.000	3.080
23.02.04.01.03.F	Tukang Batu	0,275	O.H	105.000	28.875
23.02.04.01.04.F	Pembantu Tukang	1,65	O.H	99.000	163.350
				Jumlah:	205.265
				Nilai HSPK :	1.210.746

c0 Xqmqo g'r rngntlccp" " ?'88.; 3'o ⁵"

d0 Lxo rcj 'ngdwwj cp"uwo dgt'f c {c"

O cpf qt" " ? $\frac{0,083}{0,083} \times 1 \text{ grup}$?'3"Qtcp" "

Mgr crv"Vwncpi " ? $\frac{0,028}{0,083} \times 1 \text{ grup}$? "3"Qtcpi "

Vwncpi " " ? $\frac{0,275}{0,083} \times 1 \text{ grup}$? "6"Qtcpi "

Rgo dcpw"Vwncpi " ? $\frac{1,65}{0,083} \times 1 \text{ grup}$? "43"Qtcpi "

e0 Rtqf wmkhku" "

- Fkcuwo ukncp" mupf kuk" qr gtcuk" crcv" f cp" r go grkj etccp"o gup" f crco "mupf kuk" dckn' *2.97+ " *Vcdgn' 6042" Gnkupuk" Qr gtcukpcn' Crv" f cp" Rgo grkj etccp-0

Mupf kuk' Qr gtcuk'Crv'	Rgo grkj etccp'Crv'				
	Dckn' Ugnrk'	Dckn'	Ugf cpi "	Dwtwnl'	Dwtwnl' Ugnrk'
Dckn'Ugnrk'	2.: 5"	2.: 3"	2.98"	2.92"	2.85"
Dckn'	2.9: "	2.97"	2.93"	2.87"	2.82"
Ugf cpi "	2.94"	2.8: "	2.87"	2.82"	2.76"
Dwtwnl'	2.85"	2.83"	2.79"	2.74"	2.67"
Dwtwnl'Ugnrk'	2.74"	2.72"	2.69"	2.64"	2.54"

- Fkcuwo ukncp" Mgo co r wcp" qr gtcvqt" fknvgi qtncp" vgtco r kn' *2.: 2+ " *Vcdgn' 6043" Mvcrkhkncuk'Mvgvgtco r kncp"Qr gtcvqt0

Mvcrkhkncuk'	K gpvku"	P knk'
Vgtco r kn'	c0Rgpf kf knep"UVO luf gtelev' d0Ugtvkhkncuk'UKO RIUHR" *K" f cp'cvw' e0Rgpi crco cp"@8222'lco "	2.: 2"
Ewnvr "	c0Rgpf kf knep"UVO luf gtelev' d0Ugtvkhkncuk'UKO RIUHR" *K" f cp'cvw' e0Rgpi crco cp"6222"6'8222'lco "	2.92"
Ugf cpi "	c0Rgpf kf knep"UVO luf gtelev' d0Ugtvkhkncuk'UKO RIUHR" *K" f cp'cvw' e0Rgpi crco cp"4222"6'6222'lco "	2.87"
Mwncpi "	c0Rgpf kf knep"UVO luf gtelev' d0Ugtvkhkncuk' f cp'cvw' e0Rgpi crco cp">"5222'lco "	2.72"

**uwo dgt " <' Dmw' Tglgt gpiuk' wpmw' Mqpv tcmqt "*

Dcpi wpcp'I gf wpi 'f cp'Uk k02250J cni'764+

- F kcuwo uknep"nqpf kuk'ewcec"Vgtcpi ."Ugi ct"*2.; 2+"
*Vcdgrl'6044"Mqpf kuk'Ewcec-0'

Mqpf kuk'Ewcec"	Hcmqt"	
	O gpkllco "	' "
Vgtcpi ."Ugi ct"	77 82"	2.; 2"
Vgtcpi ."Rcpca."Dgtf gdw"	72 82"	2.; 5"
O gpf wpi "	67 82"	2.97"
I gtrr "	62 82"	2.88"

**uwo dgt " <' Dmw' Tglgt gpiuk' wpmw' Mqpv tcmqt "*

Dcpi wpcp'I gf wpi 'f cp'Uk k02250J cni'764+

- Qwr w'r kwp"ukf g'f ctkeqpetgvg'r wo r "+"
?"334'o ⁵llco "uwo dgt "<dtquw"eqpetgvg'r wo r "+"
?"334'o ⁵llco 'z'2.97'z'2.: 'z'2.; '?'82.6: 'o ⁵llco "
- Lwo ncj " twnl' o kztg" *ncr cukcu" 9" o ⁵+" {cpi " f kdwjw ncj "<"

- twnl'o kztg" ? " $\frac{\text{Volume}}{\text{kapasitas mixer}}$ " $\frac{66,91 \text{ m}^3}{7 \text{ m}^3}$ " " ? " ; .78'6'32'twnl'

- Rtqf wnkukcu'r gt'j ctk'
? " $\frac{\text{Volume}}{\text{banyak hari}}$ " $\frac{66,91 \text{ m}^3}{3 \text{ hari}}$ " $\frac{66,91 \text{ m}^3}{3 \text{ hari}}$ "44.52'o ⁵lj ctk'

- Dcp {cnl'twnl'o kztg'r gt'j ctk'
? " $\frac{\text{Produktifitas}}{\text{kapsitas mixer}}$ " $\frac{22,30 \text{ m}^3/\text{hari}}{7 \text{ m}^3}$ " " ? "5.3; '6'twnlj ctk'

f0 Y cmw'

- Y cmw'r gtuker cp"*3+"
Rgpi cwtcp'r quuk' ? "32'o gpk'
Rgo cucpi cp'r kr c" ? "52'o gpk'
Krg'twnl'o kztg" ? "32'o gpk'"
" " " ? "72'o gpk'
- Y cmw'qr gtcukqpcn"*4+"

- $$? \frac{\text{Volume}}{\text{output concrete pump}} \frac{66,91 \text{ m}^3}{60,48 \text{ m}^3 / \text{jam}} \times 60 \text{ ""}$$

$$? 88.599 \text{ "o gpk"}$$
- Y cmw\co dcj "5+

Rgpti cp\cp"tvenl'	? "32"o gpk"
<u>Wk\unwo r "</u>	<u>? ""7"o gpk"</u>
" " "	? "37"o gpk"

 - Y cmw'r c\ec"r gr\mc\ccp"6+

Rgo dgtulj cp'r qo r c"	? "32"o gpk"
Rgo dqpi n\etcp"r k c"	? "52"o gpk"
<u>Rgtukr cp"ngo dcik"</u>	<u>? "32"o gpk"</u>
" " "	? "72"o gpk"

 - Vqcn'ly cmw"

? ""4"- "5"- "6+"z"	twem'o kzgt""
? "88.599"o gpk"- "72"o gpk"- "37"o gpk"- ""72"	
o gpk\z "32"twem"	
? "3438.599"o gpk"182"o gpk"	
? "42.495"lco "1": "lco "ngtlc"	
? "4.76"j ctk'é "5"j ctk"	
- g0 Dlc{c" {cpi "fkr gr\w\ep"
- Dlc{c"dgvqp""

Dlc{c""	? "xqnwo g"z"pkckJ URM"
" "	? "88.; 3"o 5"z"Tr 00432068./"
" "	? "Tr 0: 3033053.59"

 - Dlc{c"ugy c"crv"? "Tr 09022022./152"o 5"

*Uwo dgt"<RV0Xctk"Wucj c"Dgvqp+"	
Wpwn'r gt"o 5"? "Tr 0455055./"	
?	"Tr 0455055./"z"88.; 3"o 5"
?	"Tr 0370834055.55"

 - Vqcn'dlc{c"

? ""Dlc{c"- "Dlc{c"ugy c"crv""	
? ""Tr 0: 3033053.59"- "Tr 0370834055.55"	
? ""Tr 0: 80845086.92"	

60/606 Rngtłccp"Rgo dqi nēcp"Dgnkłpi "

Rngtłccp" r go dqi nēcp" dgnkłpi " nqmo " f kngtłcnp"f gpi cp"o go dqi nēcp"dgnkłpi 0F kō cpc" f cmo "ucw'i twr "vgf kłkf ctk'O cpf qt."ngr crē"wnēpi ." wnēpi "f cp"r go dcpw"wnēpi 0"Cpcrkuc"r gtj kłpi cp" f wtcuk" r go dqi nēcp" dgnkłpi " o gpi i wpcnēp" cpcrkuc"ectc"o qf gtp"f ctk'dwnw"Uqgf tclcw' *3; ; 6+0 Cpcrkuc" *ectc" o qf gtp+" cpi i ctc" dlc{c" r grmcpcpp."ugr gtv' dgtkww"<

Vcdgł6048'Lco 'hgtlc'dgnkłpi 'Vcr'hwēcp'32'b 4"

P q0	Lgpki'Egvcnēp" Mē{w'	Lco 'hgtlc'ugvkr 'hwēu'egvcnēp'32'o 4"			
		O gp{gvnł'	O go cucpi "	O go dwnc"f cp" O go dgtukj nēp"	Tgr ctcuk'
3"	Rqpf cukr cpi m cnłgo dēcp"	5/9"	4/6"	4/6"	4/7"
4"	F kpf kpi "	7/; "	5/7"	4/7"	4/7"
5"	Npcvk'	5/: "	4/6"	4/6"	4/7"
6"	Cvr "	5/; "	4/7"	4/6"	4/7"
7"	Vłepi "	6/: "	4/6"	4/6"	4/7"
8"	Mgr crē"Vłepi "	7/33"	5/9"	4/7"	4/7"
9"	Dcmłn'dcmłnł'	8/32"	5/6"	4/7"	4/7"
: "	Vēpi i c/ wpi i c"	8/34"	6/: "	5/7"	4/7"
; "	Uwf w'Vłepi " f cp'dcmłnł' dgtwnłk"	7/33"	5/; "	5/7"	4/7"
32"	Co dēpi " lgpf grē"f cp" rhpvgrł'	7/32"	5/8"	5/7"	4/7"

c0 Xqno g'r gngtłccp" " ?'6: : .362'o 4"

d0 Lwo nēj 'hgdwwj cp'lwō dgt'f c{c"

O cpf qt" " ? $\frac{0,033}{0,033} \times 1 \text{ grup}$? "3"Qtēpi "

Mgr crē"Vwnēpi " ? $\frac{0,033}{0,033} \times 1 \text{ grup}$? "3"Qtēpi "

$$V_{\text{wnepi}} = \frac{0,33}{0,033} \times 1 \text{ grup} = 32 \text{ Qtcpi}$$

$$R_{\text{go dcpw}} V_{\text{wnepi}} = \frac{0,66}{0,033} \times 1 \text{ grup} = 42 \text{ Qtcpi}$$

e0 Mcr cukcu'r tqf wmk'S vt' "

Uguwck' f gpi cp' vcdgn' 6045." dcj y c' lco " ngtlc" wpwni' o go dwne" f cp" o go dgtukj nep" egvnep" lgpu' wcp' cf cruj "ugro c" 4/6" lco " *f ki wpcnep" 4" lco " l' 32" o 4" dgnkukpi -0"

f0 Y cmw'

$$Y_{\text{cmw}} = \frac{\text{Volume}}{10 \text{ m}^2} \times 2 \text{ jam}$$

$$= \frac{488,140 \text{ m}^2}{10 \text{ m}^2} \times 2 \text{ jam} = 9,84 : \text{lco 'é' 35' j ctk'}$$

g0 Rtqf wmkxkcu"

$$\text{Rtqf wmkxkcu} = \frac{\text{volume}}{\text{durasi}} = \frac{488,140 \text{ m}^2}{13 \text{ hari}} = 59,76; \text{'o 4' l' j ctk'}$$

6077 Rngntlecp' f kpf kpi 'Eqtg' f cp' Uj gcty cm' Vgden' 47' eo "

60778 Rngntlecp' Dgnkukpi "

Rngntlecp" r rngntlecp" dgnkukpi " f kpf kpi " eqtg" f cp" uj gcty cm' f kngtlcnep" f gpi cp" dcj cp" o wmkrgnu" f cp" o gpi i wpcnep" vpci c" o cpwukc' Flo cpc" f crco " ucw" i twr " vgtfk' f ctk' O cpf qt." ngr crco" wnepi ." wnepi ." f cp" r go dcpw' wnepi 0' Dgtknw' cpcrkuc' J URM' 4237' Rngntlecp' dgnkukpi " uj gcty cm' <

Vcdgn' 6049' P hckJ URM' 4237' Uwtcdc{ c' /' Rngntlecp' Dgnkukpi 'Dcnipl'

24.03.01.19	Pekerjaan Bekesting Balok	m2	SNI 7394 :2008 (6.23
Upah :			

23.02.04.01.01.F	Mandor	0,033	O.H	3.960	3.960
23.02.04.01.02.F	Kepala Tukang Kayu	0,033	O.H	3.630	3.630
23.02.04.01.03.F	Tukang Kayu	0,33	O.H	34.650	34.650
23.02.04.01.04.F	Pembantu Tukang	0,66	O.H	65.340	65.340
				107.580	107.580
Bahan:					
20.01.01.43.04.06.F	Kayu meranti bekesting	0,04	m3	128.000	128.000
20.01.01.28.04.04.F	Paku Triplek	0,4	Kg	8.800	8.800
20.01.02.01.06.F	Manyak bekesting	0,2	liter	5.660	5.660
20.01.01.43.03.04.F	kayu Kamper balok 4/5	0,018	m3	115.200	115.200
20.01.01.34.02.F	Plywood tebal 9 mm	0,35	lembar	32.760	32.760
				290.420	290.420
				Nilai HSPK :	398.000

c0 Xq^{wo} g'r gngtlccp" " ? "43; .58"o 4"

d0 Lwo rcj "hgdwwj cp"lwo dgt'f c{c"

O cpf qt" " ? $\frac{0,033}{0,033} \times 1 \text{ grup} ? "3"Qtcpi "$

Mgr crc"Vwncpi " ? $\frac{0,033}{0,033} \times 1 \text{ grup} ? "3"Qtcpi "$

Vwncpi " " ? $\frac{0,33}{0,033} \times 1 \text{ grup} ? "32"Qtcpi "$

Rgo dcpw"Vwncpi " ? $\frac{0,66}{0,033} \times 1 \text{ grup} ? "42"Qtcpi "$

e0 Mcr cukcu'r tqf wmk'*S v+" "

Rtqf wmk'kcu'r gt"qtcp " ? $\frac{1 \text{ hari}}{0,66 \text{ hari}} \times 1 \text{ m}^2 "$

" " " " ? "3.737"o 4"

F k g p e c p c n e p " l w o n j " i t w r " ? " 4 i t w r "
 M c r c u k s c u ' r t q f w m k " S v t " ? " ' i t w r ' z ' r t q f w m k h s c u "
 " " " " ? " 4 z 4 2 + i t w r ' z ' 3.737 " o 4 "
 " " " " ? ' 82.828 " o 4 j c t k "

f0 Y c m w "

Y c m w " ? " $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? " $\frac{219,36 \text{ m}^2}{60,606 \text{ m}^2/\text{hari}}$ " ? " 5.84 ' j c t k ' 6 ' j c t k "

g0 D l c { c " { c p i " f k r g t n n e p "

F k u w o u k n e p " d g n k u k p i " f k i w p c n e p " u g d c p { c m ' 4 z "
 r g o c n e k p 0 U g j k p i i c ' r c f c ' r g p i i w p c c p ' h g f w c ' h e r k p { c "
 f k c o d c j ' 47 ' " p { c "

D l c { c " " ? " x q n w o g ' z ' p k r c k J U R M "

" " " ? " 43 ; .58 " o 4 " z " T r 0 45 : 0 ; 2 . / "

" " " ? " T r 0 : 5 0 ; 5 0 8 : . / "

F k i w p c n e p " 4 ' h e r k " ? " D l c { c ' z ' 97 ' "

" " " ? " T r 0 : 5 0 ; 5 0 8 : . / " z ' 97 ' "

" " " ? " T r 0 84 0 542 0 98 . / "

60704 R g n g t l c c p " R g o d g u k p "

R g n g t l c c p " r g n g t l c c p " r g o d g u k p "
 f k p f k p i " e q t g " f c p " u j g c t y c m " f k n g t l c n e p " f g p i c p "
 d c j c p " d g u k " w k " f c p " r q n q u u g t v c " o g p i i w p c n e p "
 v g p c i c ' b c p w u k " w p w n i r g o c u c p i c p p { c 0 F k o c p c "
 f c r o " u c w " i t w r " v g t f k k " f c t k " O c p f q t . " n g r c r c "
 w n e p i . " w n e p i . " f c p " r g o d c p w w n e p i 0 D g t k n w "
 c p e r k u c " J U R M " 4237 " R g n g t l c c p " r g o d g u k p "
 u j g c t y c m ' * V c d g n ' 6 0 : " P k r c k " J U R M " 4237 "
 U w t e d c { c " / " R g n g t l c c p " r g o d g u k p " f g p i c p " D g u k "
 D g v q p " * r q n q u l w k + " < "

24.03.01.14	Pekerjaan Pembesian dengan Besi Beton (ulir/polos)	kg	SNI 7394 :2008 (6.17)		
<u>Upah :</u>					
23.02.04.01.01.F	Mandor	0,0004	O.H	120.000	48
23.02.04.01.02.F	Kepala Tukang besi	0,0007	O.H	110.000	77
23.02.04.01.03.F	Tukang Besi	0,007	O.H	105.000	735
23.02.04.01.04.F	Pembantu Tukang	0,007	O.H	99.000	693
Jumlah:				1.553	
<u>Bahan:</u>					
20.01.01.09.01.01.F	Besi Beton (polos) d 10 mm	1,05	Kg	12.000	12.600
20.01.01.35.02.01.F	Kawat Beton	0,015	kg	23.000	345
Jumlah:				12.945	
Nilai HSPK :				14.498	

c0 Xqno g'r gntlccp" " ?"508; 5.: : "ni "

d0 Lwo nçj "hgdwwj cp"lwo dgt"f c{c"

O cpf qt" " ? " $\frac{0,0004}{0,0004}$ × 1 grup"? "3"Qtcpì "

Mçr crç "Vwncpi " ? " $\frac{0,0007}{0,0004}$ × 1 grup"? "4"Qtcpì "

Vwncpi " " ? " $\frac{0,007}{0,0004}$ × 1 grup"? "3: "Qtcpì "

Rgo dcpw"Vwncpi " ? " $\frac{0,007}{0,0004}$ × 1 grup"? "3: "Qtcpì "

e0 Mçr cukcu'r tqf wmk"*S v+" " "

Rtqf wmkkcu'r gt"qtcpì " ? " $\frac{1 \text{ hari}}{0,007 \text{ hari}}$ × 1 kg"

" " " " ? "364.: 79"ni "

F kçpcpcncp"lwo nçj "i twr " ? "3"i twr "

Mçr cukcu'r tqf wmk"*S v+" ? " "i twr "z"r tqf wmkkcu"

" " " " ? *3z3: ÷i twr "z"364.: 8mi "

" " " " ? ""40793.65"mi lj ctk"

f0 Y cmw'

Y cmw' ? " $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ ""

" " ? " $\frac{3.193,88 \text{ kg}}{2.571,43 \text{ kg/hari}}$ " ? "3.46"j ctkÉ "4"j ctk"

g0 Dlc{c" {cpi "fkr gtrwncp"

Dlc{c" ? "xqmo g"z"pkckJ URM"

" " ? "49.64"z"Tr 03606; : ./"

" " ? "Tr 06805260 ; 7.66"

60705 Rngtlccp"Rgpi geqtcp"

Rngtlccp'r rngtlccp'r gpi geqtcp"flpf lpi "

eqtg" fcp" uj gcty cm' f kngtlcncp" o gpi i wpcncp"

dgvqp" tgc{f { " o lz" ugj lpi i c" dwwj " crv" dgtev"

eqpetgvg" r wo r " fcp" twn' o lzgt." ugtv" vpci c"

o cpwuk" dgtfcuctncp" J URM" 42370' Dgtkmw"

cpcrluc" J URM" 4237" Rngtlccp" r gpi geqtcp"

uj gcty cm' *Vcdgn' 60; " P kck" J URM" 4237"

Uwtcdc{c/"Rngtlccp"Dgvqp"M522+"<

24.03.01.10	Pekerjaan Beton K-300	m3	SNI 7394 :2008 (6.7)		
	<u>Bahan :</u>				
20.01.01.02.01.F	Semen PC 40 Kg	10,33	Zak	63.000	650.475
20.01.01.04.04.F	Pasir Cor/Beton	0,425	m³	232.100	98.787
20.01.01.05.04.01.F	Batu Pecah Mesin ½ cm	0,537	m³	466.000	250.413
23.02.02.02.01.F	Air Kerja	215	Liter	27	5.805
				Jumlah:	1.005.481
	<u>Upah :</u>				
23.02.04.01.01.F	Mandor	0,083	O.H	120.000	9.960
23.02.04.01.02.F	Kepala Tukang batu	0,028	O.H	110.000	3.080

23.02.04.01.03.F	Tukang Batu	0,275	O.H	105.000	28.875
23.02.04.01.04.F	Pembantu Tukang	1,65	O.H	99.000	163.350
				Jumlah:	205.265
				Nilai HSPK :	1.210.746

c0 Xqwo g'r gngtlccp" " ? "49.64"o⁵"

d0 Lwo nɛj 'hɛdwwj cp'lwɔ dgt'f c{c"

Ocpfqt" " ? $\frac{0,083}{0,083} \times 1 \text{ grup}$? "3"Qtcp" "

Mɛr cɛr'Vwɛpi " ? $\frac{0,028}{0,083} \times 1 \text{ grup}$? "3"Qtcp" "

Vwɛpi " " ? $\frac{0,275}{0,083} \times 1 \text{ grup}$? "6"Qtcp" "

Rgo dcpw'Vwɛpi " ? $\frac{1,65}{0,083} \times 1 \text{ grup}$? "43"Qtcp" "

e0 Rtqf wmkxkcuc" "

- F kcuwo ukɛp" nɔpf kɔk' qɛ gtcuk' cɛv' f cp"
r go grɛj ctecp"o gɔk'f cɛv' "nɔpf kɔk'dɛkɛl'*2.97+ "
*Vɛdgrɛl' 6042" Gɛkɛgɔk' Qɛ gtcukɛpɛl' Cɛv' f cp"
Rgo grɛj ctecp-0'

Mɔpf kɔk' Qɛ gtcuk'Cɛv'	Rgo grɛj ctecp'Cɛv'				
	Dɛkɛl' Ugɛɛk'	Dɛkɛl'	Ugɛ cpi "	Dwtwɛl'	Dwtwɛl' Ugɛɛk'
Dɛkɛl'Ugɛɛk'	2.: 5"	2.: 3"	2.98"	2.92"	2.85"
Dɛkɛl'	2.9: "	2.97"	2.93"	2.87"	2.82"
Ugɛ cpi "	2.94"	2.8: "	2.87"	2.82"	2.76"
Dwtwɛl'	2.85"	2.83"	2.79"	2.74"	2.67"
Dwtwɛl'Ugɛɛk'	2.74"	2.72"	2.69"	2.64"	2.54"

*lwɔ dgt " < Dɛwɛl' Tɛlgt gɔk' wɛwɛl' Mɔpɛt cɛɛt "

Dɛpi wɛcp'I gɛ wɛpi 'f cp'Uɛ k02250J cɛl763+ "

- F kcuwo ukɛp" Mgo co r wɛp" qɛ gtcɛqt"
f kɛvɛi qtkɛp" vgtco r kɛl' *2.: 2+ " *Vɛdgrɛl' 6043"
Mɛɛkɛkɛl'Mɛvgtco r kɛp'Qɛ gtcɛqt-0'

Mwckhncuk'	K gpkcu'	P kck'
Vgtco r kl'	c0Rgpf kf knep'UVO luf gtelev' d0Ugtwknucuk'UKO RIUERR''Kf cp'cvcw' e0Rgpi cmo cp"@8222'lco "	2.: 2"
Ewnw "	c0Rgpf kf knep'UVO luf gtelev' d0Ugtwknucuk'UKO RIUERR''Kf cp'cvcw' e0Rgpi cmo cp"6222'o'8222'lco "	2.92"
Ugf cpi "	c0Rgpf kf knep'UVO luf gtelev' d0Ugtwknucuk'UKO RIUERR''Kf cp'cvcw' e0Rgpi cmo cp"4222'o'6222'lco "	2.87"
Mtcepi "	c0Rgpf kf knep'UVO luf gtelev' d0Ugtwknucuk'f cp'cvcw' e0Rgpi cmo cp">"5222'lco "	2.72"

**mo dgt "* < *Dmw' Tghgt gpub' wpmni' Mqpyt cmqt "*

Dcpi wpcp'I gf wpi 'f cp'Uk-k042250J ch764+

- Fkcuwo uknep'nqpf kuk'ewcec'Vgtcpi . 'Ugi ct"*2.; 2+""

*Vcdgn'6044'Mqpf kuk'Ewcec+0'

Mqpf kuk'Ewcec"	Hcmqt"	
	O gpkllco "	' "
Vgtcpi . 'Ugi ct "	77 82"	2.; 2"
Vgtcpi . 'Rcpuc.'Dgtf gdw'	72 82"	2.: 5"
O gpf wpi "	67 82"	2.97"
I grcr "	62 82"	2.88"

**mo dgt "* < *Dmw' Tghgt gpub' wpmni' Mqpyt cmqt "*

Dcpi wpcp'I gf wpi 'f cp'Uk-k042250J ch764+

- Qwr w'r knqp'ukf g'f ctk'eqpetgvg'r wo r "
- ? "334"o ⁵llco "mo dgt "<dtquw'eqpetgvg'r wo r +"
- ? "334"o ⁵llco "z"2.97"z"2.: "z"2.; "?"82.6: "o ⁵llco "
- Lwo ncj " twnd' o kzgt " *ner cukcu" 9" o ⁵+ " {cpi "
- fkdwwj nep"<

- twenlo kzgt " ? " $\frac{\text{Volume}}{\text{kapasitas mixer}}$? $\frac{27,42 \text{ m}^3}{7 \text{ m}^3}$,"

" ? "5.; 3'6"twenl

"

- Rtqf wmlkscu'r gt"j ctk'

$$? \frac{\text{Volume}}{\text{banyak hari}} \text{? } \frac{27,42 \text{ m}^3}{1 \text{ hari}} \text{? } 49.64 \text{ o }^5 \text{lj ctk'}$$
- Dcp{ cm't venl'o kz gt'r gt"j ctk'

$$? \frac{\text{Produktifitas}}{\text{kapasitas mixer}} \text{? } \frac{27,42 \text{ m}^3 / \text{hari}}{7 \text{ m}^3}$$

$$? 5.; 4 \text{ '6} \text{ 't venlj ctk'}$$

f0 Y cmw'

- Y cmw'r gtukcr cp"3+"

$$\text{Rgpi cwtcp'r quuk' } ? 32 \text{ o gpk'}$$

$$\text{Rgo cucpi cp'r kr c" } ? 52 \text{ o gpk'}$$

$$\frac{\text{Krg't venl'o kz gt" } ? 32 \text{ o gpk'}}$$

$$\text{" " " } ? 72 \text{ o gpk'}$$
- Y cmw'qr gtcukqpcn"4+"

$$? \frac{\text{Volume}}{\text{output concrete pump}} \text{? } \frac{27,42 \text{ m}^3}{60,48 \text{ m}^3 / \text{jam}} \times 60 \text{ "}$$

$$? 49.424 \text{ o gpk'}$$
- Y cmw'co dcj "5+"

$$\text{Rgpti cp'kp't venl' } ? 32 \text{ o gpk'}$$

$$\frac{\text{Wk'urwo r " } ? ""7 \text{ o gpk'}}$$

$$\text{" " " } ? 37 \text{ o gpk'}$$
- Y cmw'r cuec'r grmcucpcp"6+"

$$\text{Rgo dgtukj cp'r qo r c" } ? 32 \text{ o gpk'}$$

$$\text{Rgo dqpi nctcp'r kr c" } ? 52 \text{ o gpk'}$$

$$\frac{\text{Rgtukcr cp'ngo dcrk' } ? 32 \text{ o gpk'}}$$

$$\text{" " " } ? 72 \text{ o gpk'}$$
- Vqvcn'ly cmw'

$$? "4" - "3" - "5" - "6" + "z" \text{ t venl'o kz gt"}$$

$$? 49.424 \text{ o gpk' } - "72 \text{ o gpk' } - "37 \text{ o gpk' } - ""72 \text{ o gpk'}$$

$$\text{o gpk'+z "6't venl'}$$

$$? 6: 9.424 \text{ o gpk' } / 82 \text{ o gpk'}$$

$$? : .342 \text{ lco "T: lco 'ngtlc"}$$

$$? 3.237 \text{ j ctk' } \text{ '3 j ctk'}$$

g0 Dkc{c{"cpi "fkr gtwnep"

- Dkc{c{"dgvqp""

Dkc{c{" " ? "xqno g'z "pkckJ URM"

" " ? "49.64"o⁵"z "Tr 030432068./"

" " ? "Tr 0550; : 084.2; "

- Dkc{c{"ugy c"crv"? "Tr 09022022./152"o⁵"

*Uwo dgt "<RV0Xctk"Wucj c"Dgvqp+"

Wpwnlr gt"o⁵? "Tr 04550555./"

? "Tr 04550555./"z "49.64"o⁵"

? "Tr 0805; : 022./"

- Vqcrldkc{c"

? "Dkc{c"- "Dkc{c{"ugy c"crv"

? "Tr 0550; : 084.2; "- "Tr 0805; : 022./"

? "Tr 045; 07; 8084.2; "

60/06 Rngtlecpcp"Rgo dqpi nctcp"Dgnkupi "

Rngtlecpcp" r go dqpi nctcp" dgnkupi "
f kpf lpi " f kngtlenep" f gpi cp" o go dqpi nct
dgnkupi 0'F ko cpc"f cmco "ucw"i twr "vgtf k'f ctk'
O cpf qt." ngr crv" wnepi ." wnepi "f cp"r go dcpw'
wnepi 0' " Cpcrkuc" r gtj kwpi cp" f wtuk'
r go dqpi nctcp" dgnkupi "o gpi i vpcnep" cpcrkuc"
ectc"b qf gtp" f ctk'dmw"Uqgf tclcv0*3; ; 6-0Cpcrkuc"
*ectc" o qf gtp+" cpi i ctcpcp" dkc{c" r grv mcpccp."
ugr gt'k'dgtknw'<"

Vedgi604: 'Leo 'ngtlic'dgnkupi 'lcr'hwcup'32'b 4"

P q0'	Igpki'Egvncp" Mc{w'	Leo 'ngtlic'ugvcr'hwcup'32'o 4"			
		O gp{gvgn'	O go cucpi "	O go dwne"f cp" O go dgtukj nep"	Tgr ctcuk'
3"	Rqpf cukr cpi m cnlgo dcvp"	5/9"	4/6"	4/6"	4/7"
4"	F kpf lpi "	7/; "	5/7"	4/7"	4/7"
5"	Ncpvck'	5/; "	4/6"	4/6"	4/7"
6"	Cvcr "	5/; "	4/7"	4/6"	4/7"

7"	Vlcpi "	6/: "	4/6"	4/6"	4/7"
8"	Mgr crc"Vlcpi "	7/33"	5/9"	4/7"	4/7"
9"	Dcrqni'dcrqni'	8/32"	5/6"	4/7"	4/7"
: "	Vcpi i c/ vcpi i c"	8/34"	6/: "	5/7"	4/7"
; "	Uwf w'Vlcpi " f cp'dcrqni' dgtwnk"	7/33"	5/: "	5/7"	4/7"
32"	Co dcp " " lgpf gr'f cp " npxni'	7/32"	5/8"	5/7"	4/7"

c0 Xqno g'r gngtlccp" " ? "43; .58"o 4"

d0 Lwo rcj "ngdwwj cp"lwo dgt'f c{c"

O cpf qt" " ? $\frac{0,033}{0,033} \times 1 \text{ grup}$? "3"Qtcp " "

Mgr crc"Vwncpi " ? $\frac{0,033}{0,033} \times 1 \text{ grup}$? "3"Qtcp " "

Vwncpi " " ? $\frac{0,33}{0,033} \times 1 \text{ grup}$? "32"Qtcp " "

Rgo dcpw"Vwncpi " ? $\frac{0,66}{0,033} \times 1 \text{ grup}$? "42"Qtcp " "

e0 Mcr cukcu'r tqf wmk"S vt" " "

Uguwck'f gpi cp"cdgn'6045."dcj y c"lco "ngtlc"wpwni'
o go dwnc"f cp"o go dgtulj nep"egvncp"lgpkuf kpf kpi "
cf crcj "ugro c"4/7"lco "f ki wpcnep"4"lco "1"32"o 4"
dgnkukpi +0"

"

f0 Y cmw"

Y cmw? $\frac{\text{Volume}}{10 \text{ m}^2} \times 2 \text{ jam}$ "

" " ? $\frac{219,36 \text{ m}^2}{10 \text{ m}^2} \times 2 \text{ jam}$? "65.". 94"lco "é '8"j ctK"

g0 Rtqf wmkxkcu"

$$Rt_{qf} \text{ wmkxkcu} = \frac{volume}{durasi} = \frac{219,36 \text{ m}^2}{6 \text{ hari}}$$

$$= 36,56 \text{ m}^2 \text{ per hari}$$

60708 Rngntlccp"DcmqniUj gcty cm'47172"

60708 Rngntlccp"Dgnkukpi "

Rngntlccp" r rngntlccp" dgnkukpi "
 dcmqni'uj gcty cm' 47172" f kngtlcncp" f gpi cp"
 dcj cp"o wmkxkcu" f cp"o gpi i wpenep"vgpci c"
 o cpwukc0'F ko cpc" f crco "ucw" i twr "vgtf ktk"
 f ctk' O cpf qt." ngr crc" wncpi ." wncpi ." f cp"
 r go dcpw' wncpi 0' Dgtknw' cpcrkuc" J URM"
 4237"Rngntlccp"dgnkukpi "uj gcty cm'*Vcdgn"
 6046'P kckJ URM'4237'Uwcdc{c"/"Rngntlccp"
 Dgnkukpi "Dcmqni"<

24.03.01.19	Pekerjaan Bekesting Balok	m2	SNI 7394 :2008 (6.23		
Upah :					
23.02.04.01.01.F	Mandor	0,033	O.H	3.960	3.960
23.02.04.01.02.F	Kepala Tukang Kayu	0,033	O.H	3.630	3.630
23.02.04.01.03.F	Tukang Kayu	0,33	O.H	34.650	34.650
23.02.04.01.04.F	Pembantu Tukang	0,66	O.H	65.340	65.340
				107.580	107.580
Bahan:					
20.01.01.43.04.06.F	Kayu meranti bekesting	0,04	m3	128.000	128.000
20.01.01.28.04.04.F	Paku Triplek	0,4	Kg	8.800	8.800
20.01.02.01.06.F	Manyak bekesting	0,2	liter	5.660	5.660
20.01.01.43.03.04.F	kayu Kamper balok 4/5	0,018	m3	115.200	115.200

20.01.01.34.02.F	Plywood tebal 9 mm	0,35	lembar	32.760	32.760
				290.420	290.420
				Nilai HSPK :	398.000
c0	Xq ^{no} g'r gngtlccp" "	? "38.94"o ⁴ "			
d0	Lxo rcj "ngdwwj cp"lwo dgt"f c{c"				
	O cpf qt" "	$? \frac{0,033}{0,033} \times 1 \text{ grup} ? "3"Qtcpi "$			
	Mgr cnc"Vwncpi "	$? \frac{0,033}{0,033} \times 1 \text{ grup} ? "3"Qtcpi "$			
	Vwncpi " "	$? \frac{0,33}{0,033} \times 1 \text{ grup} ? "32"Qtcpi "$			
	Rgo dcpw"Vwncpi "	$? \frac{0,66}{0,033} \times 1 \text{ grup} ? "42"Qtcpi "$			
e0	Mcr cukcu'r tqf wmk"*S v+" "				
	Rtqf wmkhkcuc'r gt"qtcpi "	$? \frac{1 \text{ hari}}{0,66 \text{ hari}} \times 1 \text{ m}^2 \text{ "}$			
	" " " "	$? "3.737"o4"$			
	F lgtpepcncp"lwo rcj "i twr "	$? "3"i twr "$			
	Mcr cukcu'r tqf wmk"*S v+" "	$? "i twr "z"r tqf wmkhkcuc"$			
	" " " "	$? "*"3z42+i twr "z"3.737"o4"$			
	" " " "	$? "52.525"o4lj ctk"$			
f0	Y cmw"				
	Y cmw"	$? \frac{\text{Volume}}{\text{Kapasitas produksi}} \text{ "}$			
	" "	$? \frac{16,72 \text{ m}^2}{60,606 \text{ m}^2/\text{hari}} ? "2.77"j ctké "3"j ctk"$			
g0	Dlc{c"{cpi "f krgtnwncp"				
	F kcuwo ukncp" dngnku ^{pi} " f ki wpcncp" ugdcpc{cmi 4z"				
	r go cnc ^{lcp0} Ugj kpi i c'r cf c'r gpi i wpccp"ngf wc"ncp{c"				
	f kco dcj "47" "p{c"				
	Dlc{c" "	$? "xqno g'z"pkckJ URM"$			
	" " "	$? "38.94"o4z"Tr 045: Ø; 2./"$			

" " " ?"Tr 0808760782./"

F ki wpcnɛp"4'hɛrk" ?"Dlc {c"z"97" "

" " " ?"Tr 0808760782./"z"97" "

" " " ?"Tr 06Q ; 2Q 42./"

607804 Rgngtlccp"Rgo dgukcp"

Rgngtlccp" r gngtlccp" r go dgukcp" dɛrɛnɪ
uj gɛty cɪɪ47I72"F kngtlɛnɛp"f gpi cp'dɛj cp'dguk'wɪk"
f cp" r qɪqu" ugtɔc" o gpi i wpcnɛp" vɛpi c" o cpwɪk"
wpwɪn'r go cucpi cpp{c0'F kɔ cpc"f cɪɛo "ucw"i twr"
vgtf k'k'f ctk'O cpf qt." ngr cɛ" wɛɛpi ." wɛɛpi ." f cp"
r go dɛpw" wɛɛpi 0' Dgtknw" cɛɛkuc" J URM" 4237"
Rgngtlccp"r go dgukcp"dɛrɛnɪuj gɛty cɪɪ"Vɛdɛn'68: "
P kɛk'J URM"4237"Uwtɛdc{c"/Rgngtlccp"r go dgukcp"
f gpi cp"Dguk'Dgɛp"r qɪqulwɪk"+<"

24.03.01.14	Pekerjaan Pembesian dengan Besi Beton (ulir/polos)		kg	SNI 7394 :2008 (6.17)	
	<u>Upah :</u>				
23.02.04.01.01.F	Mandor	0,0004	O.H	120.000	48
23.02.04.01.02.F	Kepala Tukang besi	0,0007	O.H	110.000	77
23.02.04.01.03.F	Tukang Besi	0,007	O.H	105.000	735
23.02.04.01.04.F	Pembantu Tukang	0,007	O.H	99.000	693
				Jumlah:	1.553
	<u>Bahan:</u>				
20.01.01.09.01.01.F	Besi Beton (polos) d 10 mm	1,05	Kg	12.000	12.600
20.01.01.35.02.01.F	Kawat Beton	0,015	kg	23.000	345
				Jumlah:	12.945
				Nilai HSPK :	14.498

c0 Xqɪwɔ g'r gngtlccp" " ?"536.45"m "

d0 Lwo ncj "hgdwwj cp"lwo dgt"fc{c"

O cpf qt " ? $\frac{0,0004}{0,0004} \times 1 \text{ grup}$? "3"Qtcp " "

Mgr crc"Vwncpi " ? $\frac{0,0007}{0,0004} \times 1 \text{ grup}$? "4"Qtcp " "

Vwncpi " " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$? "3: "Qtcp " "

Rgo dcpw"Vwncpi " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$? "3: "Qtcp " "

e0 Mcr cukcu'r tqf wmk"*S v+" " "

Rtqf wmkkcu'r gt"qtcp " ? $\frac{1 \text{ hari}}{0,007 \text{ hari}} \times 1 \text{ kg}$

" " " " ? "364.: 79"mi "

F ktgpcpcncp"lwo ncj "i twr " ? "3"i twr "

Mcr cukcu'r tqf wmk"*S v+" ? " "i twr "z"r tqf wmkkcu"

" " " " ? "3z3: -i twr "z"364.: 8mi "

" " " " ? "40793.65"mi lj ctk"

"

f0 Y cmw"

Y cmw" ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? $\frac{314,23 \text{ kg}}{2.571,43 \text{ kg/hari}}$? "2.344"j ctk"3"j ctk"

g0 Dlc{c" {cpi "f kr gtnwncp"

Dlc{c" ? "xqno g"z"pkck"J URM"

" " ? "536.45"z"Tr 03606; : ./"

" " ? "Tr 060777859.5: "

6070805 Rngntlccp"Rgpi geqtcp"

Rngntlccp" r rngntlccp" dcqm' uj gcty cm'
47172"fngtlcncp"o gpi i wpcncp"dgvqp"tgcf { "o kz"
ugj kpi i c"dwwj "cncv'dgtcv"eqpetgvg'r wo r "f cp"twn'
o kzgt."ugtvc"vgpci c"o cpwukc"dgtf cuctncp"J URM"
42370' Dgtknw" cpcrkuc" J URM' 4237" Rngntlccp"

r gpi geqtecp" dcmqnl' uj gety cm' *Vcdgri' 608; " P lrc'k'
 J URM'4237"Uwtcdc{ c'/'Rgngtlccp'Dgvqp'M/522+'< "
 "

24.03.01.10	Pekerjaan Beton K-300		m3	SNI 7394 :2008 (6.7)	
Bahan :					
20.01.01.02.01.F	Semen PC 40 Kg	10,33	Zak	63.000	650.475
20.01.01.04.04.F	Pasir Cor/Beton	0,425	m³	232.100	98.787
20.01.01.05.04.01.F	Batu Pecah Mesin ½ cm	0,537	m³	466.000	250.413
23.02.02.02.01.F	Air Kerja	215	Liter	27	5.805
				Jumlah:	1.005.481
Upah :					
23.02.04.01.01.F	Mandor	0,083	O.H	120.000	9.960
23.02.04.01.02.F	Kepala Tukang batu	0,028	O.H	110.000	3.080
23.02.04.01.03.F	Tukang Batu	0,275	O.H	105.000	28.875
23.02.04.01.04.F	Pembantu Tukang	1,65	O.H	99.000	163.350
				Jumlah:	205.265
				Nilai HSPK :	1.210.746

c0 Xqrwo g'r gngtlccp" " ? "4.2; "o⁵"

d0 Lwo rcj 'ngdwwj cp'lw0 dgt'f c{ c"

O cpf qt" " ? $\frac{0,083}{0,083} \times 1$ grup"? "3"Qtcpi "

Mgr crc'Vwncpi " ? $\frac{0,028}{0,083} \times 1$ grup"? "3"Qtcpi "

Vwncpi " " ? $\frac{0,275}{0,083} \times 1$ grup"? "6"Qtcpi "

Rgo dcpw'Vwncpi " ? $\frac{1,65}{0,083} \times 1$ grup"? "43"Qtcpi "

e0 Rtqf wmkxkcu" " "

- F kcuwo uknep" nqpf kuk' qr gtcuk' crcv' fcp' r go grkj ctecp"o gulk" f crco "nqpf kuk' dclni" *2.97+
*Vcdgr' 6042" Ghukguk' Qr gtcukqpen' Crvc' fcp'
Rgo grkj ctecp-0'

Mqpf kuk' Qr gtcuk'Crvc'	Rgo grkj ctecp'Crvc'				
	Dclni' Ugnrk'	Dclni'	Ugf cpi "	Dwtwni'	Dwtwni' Ugnrk'
Dclni'Ugnrk'	2.: 5"	2.: 3"	2.98"	2.92"	2.85"
Dclni'	2.9: "	2.97"	2.93"	2.87"	2.82"
Ugf cpi "	2.94"	2.8; "	2.87"	2.82"	2.76"
Dwtwni'	2.85"	2.83"	2.79"	2.74"	2.67"
Dwtwni'Ugnrk'	2.74"	2.72"	2.69"	2.64"	2.54"

*imo dgt " <' Dmw" Tghgt gpuk' wpmi' Mqpv cmqt "

Dcpj wpcp'I gf wpi 'f cp'Ur k02250J cni763+

- F kcuwo uknep" Mgo co r wcp" qr gtcvqt" f knvcgi qtknep" vgtco r kni' *2.: 2+
*Vcdgr' 6043"
Mwcnhknuk'Mvgvgtco r knp"Qr gtcvqt-0'

Mwcnhknuk'	K gpvksu'	P knck'
Vgtco r kni'	c0Rgpf kf knep'UVO lugf gtclev' d0Ugtvknuk'UO RIURR"K" f cp'cvcw' e0Rgpi crco cp"@8222'lco "	2.: 2"
Ewvnr "	c0Rgpf kf knep'UVO lugf gtclev' d0Ugtvknuk'UO RIURR"K" f cp'cvcw' e0Rgpi crco cp'6222'6'8222'lco "	2.92"
Ugf cpi "	c0Rgpf kf knep'UVO lugf gtclev' d0Ugtvknuk'UO RIURR"K" f cp'cvcw' e0Rgpi crco cp'4222'6'6222'lco "	2.87"
Mwtcpi "	c0Rgpf kf knep'UVO lugf gtclev' d0Ugtvknuk' f cp'cvcw' e0Rgpi crco cp">"5222'lco "	2.72"

- F kcuwo uknep"nqpf kuk'ewcec"Vgtcpi ."Ugi ct"*2.; 2+
*Vcdgr'6044"nqpf kuk'Ewcec-0'

Mqpf kuk'Ewcec"	Hmqqt"	
	O gpkvllco "	' "
Vgtcpi . 'Ugi ct"	77 82"	2.; 2"
Vgtcpi . 'Rcpcu . 'Dgtf gdw"	72 82"	2.: 5"
O gpf wpi "	67 82"	2.97"
I gncr "	62 82"	2.88"

**uwo dgt " <' Dmw' T gfgt gpuk' wpmw' Mqpyt cmqt "*

Dcpi wpcp' I gf wpi 'f cp' Uk k02250J cn764 +'

- Qwr w'r kxqp "ukf g" f ctk'eqpet gvg"r wo r "+"
 $? "334" o^5 lco \text{ "uwo dgt " <dtquwt "eqpet gvg"r wo r "+"}$
 $? "334" o^5 lco \text{ "z'2.97"z'2.: "z'2.: "?'82.6: "o^5 lco "}$
- Lwo ncj " vwn' o kzgt " *ncr cukcu" 9" o ⁵ "+" { cpi " f kdwvj ncp " <
- vtenlo kzgt " ? " $\frac{\text{Volume}}{\text{kapasitas mixer}}$ " ? $\frac{2,09 \text{ m}^3}{7 \text{ m}^3}$ " " ? "2.4; ; "é"3"vtenl'
- Rtqf wmkxku'r gt "j' ctk'
 $? \frac{\text{Volume}}{\text{banyak hari}}$ " ? $\frac{2,09 \text{ m}^3}{1 \text{ hari}}$ " ? "4.2; "o ⁵ lj ctk'
- Dcp { cnl'vtenlo kzgt "r gt "j' ctk'
 $? \frac{\text{Produktifitas}}{\text{kapsitas mixer}}$ " ? $\frac{2,09 \text{ m}^3/\text{hari}}{7 \text{ m}^3}$ " ? "2.4; ; "é"3"vtenlj ctk'

f0 Y cmw'

- Y cmw'r gtuker cp "3 "+"
 $\text{Rgpi cwtcp' r quuk" } ? "32" o \text{ gpk'}$
 $\text{Rgo cucpi cp' r k' c" } ? "52" o \text{ gpk'}$
 $\frac{\text{K'ng'vtenlo kzgt "}}{\text{" " " "}} ? "32" o \text{ gpk'}$
 $\text{" " " " } ? "72" o \text{ gpk'}$
- Y cmw'qr gtukqpcn "4 "+"
 $? \frac{\text{Volume}}{\text{output concrete pump}}$ " ? $\frac{2,09 \text{ m}^3}{60,48 \text{ m}^3/\text{jam}}$ $\times 60$ " ? "4.295" o gpk'
- Y cmw'co dcj "5 "+"

- Rgpti cpkcp'twen' ? "32'o gpk'
Wk'uno r " " ? "'7'o gpk'
 " " " ? "37'o gpk'
- Y cmw'r cuec'r grncpccp'*6+ "
 Rgo dgtulj cp'r qo r c" ? "32'o gpk'
 Rgo dqpi nctcp'r k c" ? "52'o gpk'
Rgtulcr cp'ngo dcrk' ? "32'o gpk'
 " " " ? "72'o gpk'
- Vqverly cmw' "
 ? "'4"- '*3"- '5- 'v6+'z" twen'o kzgt"
 ? "4.295""o gpk'- '*72"o gpk'- "37"o gpk'- ""72"
 o gpk+z "3'twen"
 ? "339.295'o gpk'/182'o gpk'
 ? "3.; 73'lco 'l': 'lco 'ngtlc"
 ? "2.466"j ctk'3"j ctk'
- g0 Dlc{c"{cpi 'f k gtwnncp"
 - Dlc{c'dgvp""
 Dlc{c"" ? "xqno g'z'pkck'J URM"
 " " ? "4.2; 'o 5'z'Tr 00432068./"
 " " ? "Tr 040752067; .88"
 - Dlc{c'ugy c'cncv"? "Tr 090222022./152'o 5"
 *Uwo dgt"<RV0Xctlc"Wucj c'Dgvp+ "
 Wpwnlr gt'o 5"? "Tr 04550555./"
 ? "Tr 04550555./""z"4.2; ""o 5"
 ? "Tr 06: 9088.89"
 - Vqver'ldlc{c"
 ? "'Dlc{c"- "Dlc{c'ugy c'cncv"
 ? "'Tr 040752067; .88"- "Tr 06: 9088.89"
 ? "'Tr 05023: 048.54"
- 60/06 Rngtlccp'Rgo dqpi nctcp"Dgnkupi "
 Rngtlccp" r go dqpi nctcp" dgnkupi " dcrqni "
 fngtlcncp" f gpi cp" o go dqpi nct" dgnkupi 0'

F lo cpe" f cmo " ucw" i twr " vgtf k k" f ctk" O cpf qt." ngr crc" vwnepi ." vwnepi " f cp" r go dcpw" vwnepi 0" Cperkuc" r gtj kwpi cp" f wtuk" r go dqpi netcp" dgnkukpi "o gpi i wpcnep" cperkuc" ectc" o qf gtp" f ctk" dwnw" Uqgf tclcw' *3; ; 6+0' Cperkuc" *ectc" o qf gtp+" cpi i ctc p" dk{c' r grmcpcpp. 'ugr gt' k' dgtknw' <

Vedgn604; Lco 'hgtlc' dgnkukpi 'lcr 'hwcup' 32' b 4"

P q0'	Igpku' Egvcnep" Mc{ w'	Lco 'hgtlc' ugkr 'hwcup' 32' b 4"			
		O gp{ gvgi'	O go cucpi "	O go dwnc' f cp" O go dgtukj nep"	Tgr ctcuk'
3"	Rqpf cukr cpi m cni lgo dcvcp"	5/9"	4/6"	4/6"	4/7"
4"	F kpf lpi "	7/; "	5/7"	4/7"	4/7"
5"	Ncpvk'	5/; "	4/6"	4/6"	4/7"
6"	Cxcr "	5/; "	4/7"	4/6"	4/7"
7"	Vkcp i "	6/; "	4/6"	4/6"	4/7"
8"	Mgr crc" Vkcp i "	7/33"	5/9"	4/7"	4/7"
9"	Dcrqm dcrqni'	8/32"	5/6"	4/7"	4/7"
:	Vcpi i c/ xpi i c"	8/34"	6/; "	5/7"	4/7"
;	Uwf w' vkcp i " f cp' dcrqni' dgtwnk' "	7/33"	5/; "	5/7"	4/7"
32"	Co dcp i " lgp f grc' f cp" rkpvgi'	7/32"	5/8"	5/7"	4/7"

c0 Xqrwo g' r gngtlccp" " ? "38.94" o 4"

d0 Lwo n j 'hgdwwj cp' uwo dgt' f c{ c"

O cpf qt" " ? $\frac{0,033}{0,033} \times 1 \text{ grup}$? "3" Qtcpi "

Mgr crc" Vwnepi " ? $\frac{0,033}{0,033} \times 1 \text{ grup}$? "3" Qtcpi "

Vwnepi " " ? $\frac{0,33}{0,033} \times 1 \text{ grup}$? "32" Qtcpi "

Rgo dcpw"Vwncpi " ? " $\frac{0,66}{0,033} \times 1 \text{ grup}$ "? "42"Qtcp " "

e0 Mcr cukcu"r tqf wnk" *S v" " "

Uguwck" f gpi cp" wdgri" 6045. "dcj y c" lco "ngtlc" wpmwri
o go dwnc" f cp" o go dgtulj ncp" egvncp" lgpku" dcrni"
cf crj "ugro c" 4/7" lco " *f ki wpcncp" 4" lco " 1" 32" o 4"
dgnkukpi +0"

f0 Y cmw"

Y cmw? " $\frac{\text{Volume}}{10 \text{ m}^2} \times 2 \text{ jam}$ "

" " " " ? " $\frac{16,72 \text{ m}^2}{10 \text{ m}^2} \times 2 \text{ jam}$ " ? "5.566" lco "é" 3" j ctk'

g0 Rtqf wnkxkcu"

Rtqf wnkxkcu" ? " $\frac{\text{volume}}{\text{durasi}} = \frac{16,72 \text{ m}^2}{1 \text{ hari}}$ "

? "38.94" o 4" Ij ctk'

6070 "Rngntlccp" Mqmo "Rtemku" f cp" DcrniNcwck"

6070B Rngntlccp" Dgnkukpi "

Rngntlccp" r rngntlccp" dgnkukpi " nqmo "
r temku" f cp" dcrniNcwck" f kngtlcncp" f gpi cp" dcj cp"
o wnk ngmu" f cp" o gpi i wpcncp" wpci c" o cpwuk0
F lo cpc" f crco "ucw" i tw "vgtf kK" f ctk' O cpf qt. "
ngr crc" wncpi . "wncpi . " f cp" r go dcpw" wncpi 0'
Dgtknw" cpcrkuc" J URM" 4237" Rngntlccp"
dgnkukpi " nqmo " r temku" *Vcdgri" 6089" P krck'
J URM" 4237" Uwtcdc{ c"/ " Rngntlccp" Dgnkukpi "
Unqht" < "

24.03.01.17	Pekerjaan Bekesting Sloof	m2	SNI 7394 :2008 (6.21)		
Upah :					
23.02.04.01.01.F	Mandor	0,026	O.H	120.000	3.120

23.02.04.01.02.F	Kepala Tukang Kayu	0,026	O.H	110.000	2.860
23.02.04.01.03.F	Tukang Kayu	0,26	O.H	105.000	27.300
23.02.04.01.04.F	Pembantu Tukang	0,52	O.H	99.000	51.480
Jumlah:				84.760	
Bahan:					
20.01.01.43.04.06.F	Kayu meranti bekesting	0,045	m3	3.200.000	144.000
20.01.01.28.04.04.F	Paku usuk	0,3	Kg	22.000	6.600
20.01.02.01.06.F	Manyak bekesting	0,1	liter	28.300	2.830
Jumlah:				153.430	
Nilai HSPK :				238.190	

c0 Xqno g'r gngtlccp" " ?'97.95'o 4"

d0 Lwo ncj "ngdwwj cp'lw0 dgt'f c{c"

O cpf qt" " ? $\frac{0,026}{0,026} \times 1 \text{ grup}$? "3"Qtcp " "

Mgr cr:"Vwncpi " ? $\frac{0,026}{0,026} \times 1 \text{ grup}$? "3"Qtcp " "

Vwncpi " " ? $\frac{0,260}{0,026} \times 1 \text{ grup}$? "32"Qtcp " "

Rgo dcpw"Vwncpi " ? $\frac{0,52}{0,026} \times 1 \text{ grup}$? "42"Qtcp " "

e0 Mcr cukcu'r tqf wmk" S v+" " "

Rtqf wmkcu'r gt"qtcp " ? $\frac{1 \text{ hari}}{0,52 \text{ hari}} \times 1 \text{ m}^2$ " "

" " " " ? "3.; 45'o 4"

F kgpepcncp"lwo ncj "i twr " ? "4'i twr " "

Mcr cukcu'r tqf wmk" S v+" ? " 'i twr "z'r tqf wmkcu" "

" " " " ? "3z42+i twr "z"3.; 45'o 4"

" " " " ? "5: .684'o 4 lj ctk" "

f0 Y cmw"

Y cmw" ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$

" " ? $\frac{75,73 \text{ m}^2}{38,462 \text{ m}^2/\text{hari}}$? "3.; 9'j ctké "4'j ctk'

g0 Dlc{c" {cpi "f k gtwnep"

F kcuwo uknep" dgmkuipi " f ki wpcnep" ugdcpi{cni' 4z"

r go cnckcp0Ugj kpi i c'r cf c'r gpi i wpccp'hgf wc'hncp{c" f kco dcj '47' "p{c"

Dlc{c" " ? "xqno g'z'pkck'J URM"

" " " ? '97.95'b 4"z'Tr 045: Ø; 2./"

" " " ? "Tr 03: Ø5: Q 44.89"

F ki wpcnep"4'hnc' ? "Dlc{c'z'97' "

" " " ? "Tr 03: Ø5: Q 44.89'z'97' "

" " " ? "Tr 03504; Ø; 4./"

607004 Rngtllcp"Rgo dgukp"

Rngtllcp" r nggtllcp" r go dgukp" nqno " r tcmku" f cp" denqni' r vck' f nggtllcp" f gpi cp" dcj cp" dguk' wkt" f cp" r qnu" ugtv" o gpi i wpcnep" vgcpi c" o cpwuk" wpmi' r go cucpi cpp{c0' F ko cpc" f cno " ucw" i twr " vgtf k' f ctk' O cpf qt. " ngr cnc" wncpi. " wncpi. " f cp" r go depw' wncpi 0' Dgtknw" cpcrkuc" J URM' 4237" Rngtllcp" r go dgukp" nqno " r tcmku" *Vcdgn' 6Ø: " P kck' J URM' 4237" Uwtcdc{c" /" Rngtllcp" r go dgukp" f gpi cp" Dguk' Dgvqp" *r qnqulwkt+<"

24.03.01.14	Pekerjaan Pembesian dengan Besi Beton (ulir/polos)	kg	SNI 7394 :2008 (6.17)		
<u>Upah :</u>					
23.02.04.01.01.F	Mandor	0,0004	O.H	120.000	48

23.02.04.01.02.F	Kepala Tukang besi	0,0007	O.H	110.000	77
23.02.04.01.03.F	Tukang Besi	0,007	O.H	105.000	735
23.02.04.01.04.F	Pembantu Tukang	0,007	O.H	99.000	693
Jumlah:					1.553
Bahan:					
20.01.01.09.01.01.F	Besi Beton (polos) d 10 mm	1,05	Kg	12.000	12.600
20.01.01.35.02.01.F	Kawat Beton	0,015	kg	23.000	345
Jumlah:					12.945
Nilai HSPK :					14.498

c0 Xqno g'r gngtlccp" " ? "3Ø: 5.8; "m "

d0 Lwo nçj "ngdwwj cp"lwo dgt"f c{ c"

O cpf qt" " ? $\frac{0,0004}{0,0004} \times 1 \text{ grup}$? "3"Qtcp i "

Mçr crç"Vwncpi " ? $\frac{0,0007}{0,0004} \times 1 \text{ grup}$? "4"Qtcp i "

Vwncpi " " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$? "3: "Qtcp i "

Rgo dcpw"Vwncpi " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$? "3: "Qtcp i "

e0 Mçr cukcu'r tqf wmk" S vç" " "

Rtqf wmkkcu'r gt"qtcp i " ? $\frac{1 \text{ hari}}{0,007 \text{ hari}} \times 1 \text{ kg}$ "

" " " " ? "364.: 79"m "

F kçpecpcncp"lwo nçj "i t wç " ? "3"i t wç "

Mçr cukcu'r tqf wmk" S vç" ? " "i t wç "z'r tqf wmkkcu"

" " " " ? "3z3: i t wç "z"364.: 8m "

" " " " ? "40793.65"m lç ctk"

f0 Y cmw'

Y cmw' ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? " $\frac{1.083,69 \text{ kg}}{2.571,43 \text{ kg/hari}}$ " ? "2.64"j ctk'É "3"j ctk"
 g0 Dlc{c"}{cpi "f k gtñwncp"
 Dlc{c" ? "xqñwo g'z'pkrck'J URM"
 " " ? "3Ø: 5.8; 'z'Tr 03606; : ./"
 " " ? "Tr 03703304; 9.25"

607005 Rngntlccp"Rgpi geqtcg"

Rngntlccp" r gngtlccp" r gpi geqtcg" nqñqo "
 r tcmku" f cp" denqñ'ñ'vck' f kngtlcncp" o gpi i wpcncp"
 vgpci c" o cpwukc" dgtf cuctncp" J URM'42370'Dgtknw"
 cpcrkuc" J URM'4237" Rngntlccp" r gpi geqtcg" nqñqo "
 r tcmku" <

Vcdgñ6052'PkrckJ URM'4237'Uwtcdc{c'/'Rngntlccp'Dgwpñ'M/447"

24.03.01.07	Pekerjaan Beton K-225	m3			
Upah :					
23.02.04.01.01.F	Mandor	0,083	O.H	120.000	9.960
23.02.04.01.02.F	Kepala Tukang batu	0,028	O.H	110.000	3.080
23.02.04.01.03.F	Tukang Batu	0,275	O.H	105.000	28.875
23.02.04.01.04.F	Pembantu Tukang	1,65	O.H	99.000	163.350
				Jumlah:	205.265
Bahan:					
20.01.01.02.01.F	Semen Portland (40Kg)	9,275	Zak	63.000	584.325
20.01.01.04.04.F	Pasir Beton	0,43625	m3	232.100	101.254
20.01.01.05.04.01.F	Batu Pecah Mesin 1/2 cm	0,551	m3	466.000	256.766
23.02.02.02.01.F	Air (biya air tawar)	215	liter	27	5.805
				Jumlah:	948.150
				Nilai HSPK :	1.153.415

c0 Xqno g'r gngtlccp" " ?"7.8: 'o⁵"

d0 Lwo ncj "ngdwwj cp'lw dgt'f c{c"

O cpf qt" " ? $\frac{0,083}{0,083} \times 1 \text{ grup}$? "3"Qtcp" "

Mgr cr: "Vwncpi" ? $\frac{0,028}{0,083} \times 1 \text{ grup}$? "3"Qtcp" "

Vwncpi" " ? $\frac{0,275}{0,083} \times 1 \text{ grup}$? "6"Qtcp" "

Rgo dcpw"Vwncpi" ? $\frac{1,65}{0,083} \times 1 \text{ grup}$? "43"Qtcp" "

e0 Mcr cukcu'r tqf wmk" *S v+" "

Rtqf wmkhku'r gt"qtcp" ? $\frac{1 \text{ hari}}{1,65 \text{ hari}} \times 1 \text{ m}^3$ "

" " " " ? "2.828"o⁵"

F kgpecpcncp"lwo ncj "i twr" ? "3"i twr"

Mcr cukcu'r tqf wmk" *S v+" ? "i twr "z"r tqf wmkhku'r

" " " " ? "3z43+i twr "z"2.828"o⁵"

" " " " ? "34.343"o⁵lj ctk"

f0 Y cmw"

Y cmw" ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? $\frac{5,68 \text{ m}^3}{12,121 \text{ m}^3/\text{hari}}$? "2.69"j ctké "3"j ctk"

g0 Dlc{c}{cpi "fkr gtrncp"

Dlc{c} ? "xqno g"z"pkckJ URM"

" " ? "7.8: "z"Tr 03075037./"

" " ? "Tr 080730; 7.29"

6070 Rngtlccp"Dgvq"Dgtwncpi "Ncpck"

6070 0 Rngtlccp"Rgo dgukp"

Rngtlccp"r gngtlccp"r go dgukp"dgvp"
dgtwncpi "rpkckf kngtlcncp" f gpi cp"dcj cp"dguk"
wkt" f cp" r qru" ugtc" o gpi i wpcncp" vgcpi c"

o cpwuk" wpwnl' r go cucpi cpp{c0' F ko cpc"
 f crco "ucw"i twr "gtf k'k'f ctK'O cpf qt."ngr crc"
 wncpi ." wncpi ." f cp" r go dcpw' wncpi 0'
 Dgtknw' cpcrkuc" J URM' 4237" Rngntlccp"
 r go dgukp"dcqnltuj gety cm"Vcdgn'60: "P krk"
 J URM'4237"Uwcdc{c'/"Rngntlccp'r go dgukp"
 f gpi cp"Dguk'Dgvqp"r qmulwkt + "<

24.03.01.14	Pekerjaan Pembesian dengan Besi Beton (ulir/polos)	kg	SNI 7394 :2008 (6.17)		
Upah :					
23.02.04.01.01.F	Mandor	0,0004	O.H	120.000	48
23.02.04.01.02.F	Kepala Tukang besi	0,0007	O.H	110.000	77
23.02.04.01.03.F	Tukang Besi	0,007	O.H	105.000	735
23.02.04.01.04.F	Pembantu Tukang	0,007	O.H	99.000	693
Jumlah:				1.553	
Bahan:					
20.01.01.09.01.01.F	Besi Beton (polos) d 10 mm	1,05	Kg	12.000	12.600
20.01.01.35.02.01.F	Kawat Beton	0,015	kg	23.000	345
Jumlah:				12.945	
Nilai HSPK :				14.498	

c0 Xqrwo g'r gngtlccp" " ? "590 ; 5.87ni "

d0 Lxo rcj "ngdwwj cp"lwo dgt'f c{c"

$$O \text{ cpf qt} " " ? \frac{0,0004}{0,0004} \times 1 \text{ grup} ? "3" Qtcpi "$$

$$Mg \text{r crc} "Vwncpi " ? \frac{0,0007}{0,0004} \times 1 \text{ grup} ? "4" Qtcpi "$$

$$Vwncpi " " ? \frac{0,007}{0,0004} \times 1 \text{ grup} ? "3: " Qtcpi "$$

- Rgo dcpw"Vwncpi " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$? "3: "Qtcp " "
- e0 Mcr cukcu'r tqf wmk"S vt" " "
- Rtqf wmkhkcuc'r gt"qtcp " ? $\frac{1 \text{ hari}}{0,007 \text{ hari}} \times 1 \text{ kg}$ "
- " " " " ? "364.: 79"mi "
- F kgpecpcncp"lwo ncj "i twr " ? "3"i twr "
- Mcr cukcu'r tqf wmk"S vt" ? " "i twr "z'r tqf wmkhkcuc "
- " " " " ? "3z3: +i twr "z"364.: 8mi "
- " " " " ? "40/93.65"mi lj ctk"
- f0 Y cmw'
- Y cmw' ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "
- " " ? $\frac{7.993,65 \text{ kg}}{2.571,43 \text{ kg/hari}}$? "5.33"j ctk'ē "5"j ctk'
- g0 Dlc{c}{cpi "fkr gtnncp"
- Dlc{c" ? "xqno g"z"pkckJ URM"
- " " ? "90 ; 5.87"z"Tr 03606; : ./"
- " " ? "Tr 03370 ; 30 97.; 6"

6070 04 Rngntlccp"Rgpi geqtcpi"

Rngntlccp" r rngntlccp" dgvp" dgtwrcpi " rcpvk'f kngtlcncp"o gpi i wpcncp"dgvp"tgc{ "o lz" ugj kpi i c'dwwj 'cncvldgtcvēqpetgv't wo r "fcp'twni" o kzgt."ugtvc"vgpci c"o cpwuk"dgtf cuctncp"J URM" 42370' Dgtknw" cpcnkuc" J URM" 4237" Rngntlccp" r gpi geqtcpi" dgvp" dgtwrcpi " rcpvk' *Vcdgri' 608; " P kckJ URM"4237'Uwtcdc{c/"Rngntlccp'Dgvp/M 522+<"

24.03.01.10	Pekerjaan Beton K-300	m3	SNI 7394 :2008 (6.7)		
Bahan :					
20.01.01.02.01.F	Semen PC 40 Kg	10,33	Zak	63.000	650.475
20.01.01.04.04.F	Pasir Cor/Beton	0,425	m ³	232.100	98.787

20.01.01.05.04.01.F	Batu Pecah Mesin ½ cm	0,537	m ³	466.000	250.413
23.02.02.02.01.F	Air Kerja	215	Liter	27	5.805
				Jumlah:	1.005.481
Upah :					
23.02.04.01.01.F	Mandor	0,083	O.H	120.000	9.960
23.02.04.01.02.F	Kepala Tukang batu	0,028	O.H	110.000	3.080
23.02.04.01.03.F	Tukang Batu	0,275	O.H	105.000	28.875
23.02.04.01.04.F	Pembantu Tukang	1,65	O.H	99.000	163.350
				Jumlah:	205.265
				Nilai HSPK :	1.210.746

c0 Xqrxo g'r gngtlccp" " ?": 8.44"o⁵"

d0 Lxo rcj 'ngdwwj cp"lwo dgt"fc{c"

O cpf qt" " ? $\frac{0,083}{0,083} \times 1 \text{ grup} ? "3"Qtcpi "$

Mgr crc"Vwnepi " ? $\frac{0,028}{0,083} \times 1 \text{ grup} ? "3"Qtcpi "$

Vwnepi " " ? $\frac{0,275}{0,083} \times 1 \text{ grup} ? "6"Qtcpi "$

Rgo dcpw"Vwnepi " ? $\frac{1,65}{0,083} \times 1 \text{ grup} ? "43"Qtcpi "$

e0 Rtqf wmkxkcu" "

- F kcuwo uknep" nqpf luk' qr gtcuk' crcv" fcp"
r go grkj ctccp"o gulk"fcrcxo "nqpf luk'dcln'*2.97+ "
*Vcdgn' 6042" Ghulguk' Qr gtcukqpen' Crcv" fcp"
Rgo grkj ctccp-0'

Mqpf luk' Qr gtcuk'Cr cv'	Rgo grkj ctccp'Cr cv'				
	Dcln' Ugnerk'	Dcln'	Ugf cpi "	Dwtwni'	Dwtwni' Ugnerk'
Dcln'Ugnerk'	2.: 5"	2.: 3"	2.98"	2.92"	2.85"
Dcln'	2.9: "	2.97"	2.93"	2.87"	2.82"

Ugf cpi "	2.94"	2.8; "	2.87"	2.82"	2.76"
Dwt wni'	2.85"	2.83"	2.79"	2.74"	2.67"
Dwt wni'Ugnert'	2.74"	2.72"	2.69"	2.64"	2.54"

*mo dgt " < Dmw" Tglgt gpuk" wpmni' Mqpyt cmqt "

Dcpi wpcp'I gf wpi 'f cp'Ukr-k02250J ch763+

- F kcuwo uknep" Mgo co r wcp" qr gtcvqt"
f knēvgi qt knep" vgtco r ki' *2.: 2+ " *Vcdgn' 6043"

Mwcrkknep'Mvgvtco r knep'Qr gtcvqt+0'

Mwcrkknep'	K gpvcu"	P kck'
Vgtco r ki'	c0Rgpf kf knep'UVO lugf gtclev' d(Ugt wknep'UO RIURR)*Kf'f cp'cvcw' e0Rgpi cwo cp"@8222'Ico "	2.: 2"
Ewnw "	c0Rgpf kf knep'UVO lugf gtclev' d(Ugt wknep'UO RIURR)*Kf'f cp'cvcw' e0Rgpi cwo cp'6222"6"8222'Ico "	2.92"
Ugf cpi "	c0Rgpf kf knep'UVO lugf gtclev' d(Ugt wknep'UO RIURR)*Kf'f cp'cvcw' e0Rgpi cwo cp'4222"6"6222'Ico "	2.87"
Mwtcpi "	c0Rgpf kf knep'UVO lugf gtclev' d(Ugt wknep'UO RIURR)*Kf'f cp'cvcw' e0Rgpi cwo cp'>5222'Ico "	2.72"

*mo dgt " < Dmw" Tglgt gpuk" wpmni' Mqpyt cmqt "

Dcpi wpcp'I gf wpi 'f cp'Ukr-k02250J ch764+

- F kcuwo uknep"mpf kuk'ewcec"Vgtcpi ."Ugi ct"*2.; 2"
*Vcdgn'6044"Mqpf kuk'Ewcec+0'

Mqpf kuk'Ewcec"	Hemqt"	
	O gpklco "	' "
Vgtcpi ."Ugi ct"	77 182"	2.; 2"
Vgtcpi ."Repeu.'Dgtf gdw'	72 182"	2.: 5"
O gpf wpi "	67 182"	2.97"
I grr "	62 182"	2.88"

*mo dgt " < Dmw" Tglgt gpuk" wpmni' Mqpyt cmqt "

Dcpi wpcp'I gf wpi 'f cp'Ukr-k02250J ch764+

- Qwr w'r knqp"ukf g'f ct k'eqpet gvg'r wo r "

? "334'o ⁵llco "kwo dgt "<dtquw"eqpetgvg'r wo r +"

? "334'o ⁵llco 'z'2.97'z'2.: 'z'2.; '?'82.6: 'o ⁵llco "

- Lwo ncj " twm' o kzgt " *ncr cukcu" 9" o ⁵+ " {cpi " fklwwj ncp"<"

- twem'lo kzgt " ? " $\frac{\text{Volume}}{\text{kapasitas mixer}}$ " ? $\frac{86,22 \text{ m}^3}{7 \text{ m}^3}$ " " ? "34.54'é'35'twem'

- Rtqf wmkxkc'u'r gt'j ctk'

? " $\frac{\text{Volume}}{\text{banyak hari}}$ " ? $\frac{86,22 \text{ m}^3}{1 \text{ hari}}$ " ? "4.2; 'o ⁵lj ctk'

- Dcp {cm'twem'lo kzgt'r gt'j ctk'

? " $\frac{\text{Produktifitas}}{\text{kapsitas mixer}}$ " ? $\frac{2,09 \text{ m}^3/\text{hari}}{7 \text{ m}^3}$ " " ? "2.4; ; 'é'3'twem'j ctk'

f0 Y cmw'

- Y cmw'r gtuler cp "k3+"

Rgpi cwtcp'r quuk' ? "32'o gpk'

Rgo cucpi cp'r kr c" ? "52'o gpk'

Krg'twem'lo kzgt " ? "32'o gpk' "

" " " ? "72'o gpk'

- Y cmw'qr gtcukqpcn "k4+"

? " $\frac{\text{Volume}}{\text{output concrete pump}}$ " ? " $\frac{86,22 \text{ m}^3}{60,48 \text{ m}^3/\text{jam}} \times 60$ " " ? "7.758'o gpk'

- Y cmw'co dcj "k5+"

Rgpti cp'kcp'twem' ? "32'o gpk'

Wk'uno r " " ? "7'o gpk'

" " " ? "37'o gpk'

- Y cmw'r cuec'r grmcpcpcp "k6+"

Rgo dgtulj cp'r qo r c" ? "32'o gpk'

Rgo dqpi nctcp'r kr c" ? "52'o gpk'

Rgtuler cp'ngo dcrk' ? "32'o gpk'

" " " ? "72'o gpk'

- Vqcn'y cmw'
 ?""v4"- "v3"- "v5- "v6+"z" tvenlo kzgt""
 ?": 7.758"o gpk'- "v72"o gpk'- "37"o gpk'- ""72"
 o gpkv+z'35'tvenl"
 ?"307: 2: .758"o gpk'"82"o gpk"
 ?"48.564"lco "l": "lco "ngtlc"
 ?"5.4; "j ctk'6"j ctk'
- g0 Dlc{c"{cpi "fkr gtrwrep"
 - Dlc{c"dgvqp""
 Dlc{c"" ?"xqno g"z"pkrckJ URM"
 " " ?": 8.44"o 5"z"Tr 00432068./"
 " " ?"Tr 032605; 20763.5; "
 - Dlc{c"ugy c"crv"? "Tr 09022022./152"o 5"
 *Uwo dgt"<RV0Xctk"Wucj c"Dgvqp+"
 Wpwnlr gt"o 5"? "Tr 04550555./"
 ?"Tr 04550555./"z": 8.44"o 5"
 ?"Tr 042083: 022./"
 - Vqcn'dlc{c"
 ?""Dlc{c"- "Dlc{c"ugy c"crv"
 ?""Tr 032605; 20763.5; "- "Tr 042083: 022./"
 ?""Tr 0346072: 0763.5; "
- 607Q Rngntlccp"Rrv'Dgvqp"Tco r "vgden'32"eo "
 Rngntlccp"r rv' dgvqp" tco r "fngtlcncp"
 o gpi i wpcncp"vgpci c'o cpwuk0F ko cpc'f crco "ucw"
 i twr "vgtf k'f ctk'o cpf qt."Mcr cr'wnepi . "Vwnepi ."
 f cp'r go dcpw'wnepi 0Dgtknw'cpcrk'J URM'4237"
 Rngntlccp"Rrv'dgvqp"tco r "vcdgn'6045'P krckJ URM"
 4237"Uwcdc{c"/"Rngntlccp"Dgvqp"M/447+"<

24.03.01.07	Pekerjaan Beton K-225	m3			
Upah					
23.02.04.01.01.F	Mandor	0,083	O.H	120.000	9.960

23.02.04.01.02.F	Kepala Tukang	0,028	O.H	110.000	3.080
23.02.04.01.03.F	Tukang	0,275	O.H	105.000	28.875
23.01.04.01.04.F	Pembantu Tukang	1,65	O.H	99.000	163.350
Jumlah:				205.265	
Bahan :					
20.01.01.02.01.F	Semen Portland (40Kg)	9,275	Zak	63.000	584.325
20.01.01.04.04.F	Pasir Beton	0,4363	m3	232.100	101.265
20.01.01.05.04.01.F	Batu Pecah Mesin 1/2 cm	0,5511	m3	466.000	256.805
23.02.02.02.01.F	Air (biaya air tawar)	215	liter	27	5.805
Jumlah:				948.208	
Nilai HSPK :				1.153.473	

"

c0 Xq^{no} g'r g^{ng}tlccp" " ?"3.22"o "d0 Lwo r^j"ngdwwj cp"lwo dgt"f c{c"O cpf qt" " ? $\frac{0,083}{0,083} \times 1 \text{ grup}?$ "3"Qtcpⁱ "M^{gr} cr^c"Vwncⁱpi " ? $\frac{0,028}{0,083} \times 1 \text{ grup}?$ "3"Qtcpⁱ "Vwncⁱpi " " ? $\frac{0,275}{0,083} \times 1 \text{ grup}?$ "6"Qtcpⁱ "Rgo dcpw"Vwncⁱpi " ? $\frac{1,65}{0,083} \times 1 \text{ grup}?$ "42"Qtcpⁱ "e0 M^{cr} cukcu'r tqf w^{nk}"*S v⁺" "Rtqf w^{nk}h^{ku}cu'r gt"qtcpⁱ " ? $\frac{1 \text{ hari}}{1,65 \text{ hari}} \times 1 \text{ m}^3$ "

" " " " ?"2.828"o "

F l^tgpecpcn^{ep}"lwo r^j "i twr " ?"3"i twr "M^{cr} cukcu'r tqf w^{nk}"*S v⁺" ?" "i twr "z"r tqf w^{nk}h^{ku}cu"

" " " " ?"3z42+"z"2.828"o "

" " " " ?"34.34"o l^j ctk"

f0 Y cmw"

Y cmw' ? " $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? " $\frac{1,00 \text{ m}^3}{12,12 \text{ m}^3/\text{hari}}$ " ? "2.2: 'j ctk' 3'j ctk"

g0 Dlc{c" {cpi "Fr gtnwncp"

Dlc{c" ? "xqmo g'z "pkck'J URM"

" " ? "3.22'z "Tr 0308750695./"

" " ? "Tr 0308750695./"

60082 Rngntlccp "Dcnqm "DcnqmMqpuqn "f cp "DcnqmUj gcty cm"

600820 "Rngntlccp "Dgnkukpi "

Rngntlccp "r rngntlccp "dgnkukpi "dcnqm"
f lngtlnep " f gpi cp" dcj cp" o wnr rgmu" f cp"
o gpi i wpcncp "gpci c'b cpwuk0F lo cpc'f cmo "
ucw'i twr "vgf k'k'f ctk'O cpf qt."ngr crn'wnepi ."
wnepi . "f cp'r go dcpw'wnepi 0Dgtknw'cpcrkuc"
J URM'4237 "Rngntlccp "dgnkukpi "dcnqm" Vcdgn"
6046 "P kck'J URM'4237 "Uwcdc {c'/" "Rngntlccp"
Dgnkukpi "Dcnqm"

24.03.01.19	Pekerjaan Bekesting Balok	m2	SNI 7394 :2008 (6.21)		
Upah :					
23.02.04.01.01.F	Mandor	0,033	O.H	120.000	3.960
23.02.04.01.02.F	Kepala Tukang Kayu	0,033	O.H	110.000	3.630
23.02.04.01.03.F	Tukang Kayu	0,33	O.H	105.000	34.650
23.02.04.01.04.F	Pembantu Tukang	0,66	O.H	99.000	65.340
Jumlah:				107.580	
Bahan:					
20.01.01.43.04.06 .F	Kayu meranti bekesting	0,04	m3	3.200.000	128.000
20.01.01.28.04.04 .F	Paku Triplek	0,4	Kg	22.000	8.800

20.01.02.01.06.F	Manyak bekesting	0,2	liter	28.300	5.660
20.01.01.43.03.04.F	kayu Kamper balok 4/5	0,018	m3	6.400.000	115.200
20.01.01.34.02.F	Plywood tebal 9 mm	0,35	lem bar	93.600	32.760
Jumlah:				290.420	
Nilai HSPK :				398.000	

c0 Xqno g'r gngtlccp" " ?": 82.85'o 4"

d0 Lwo nçj "hgdwwj cp'lwo dgt'f c{c"

O cpf qt" " ? $\frac{0,033}{0,033} \times 1$ grup"? "3"Qtcpì "

Mçr crç"Vwncpi " ? $\frac{0,033}{0,033} \times 1$ grup"? "3"Qtcpì "

Vwncpi " " ? $\frac{0,330}{0,033} \times 1$ grup"? "32"Qtcpì "

Rgo dcpw"Vwncpi " ? $\frac{0,660}{0,033} \times 1$ grup"? "42"Qtcpì "

e0 Mçr cukcu'r tqf wmk"*S v+" " "

Rtqf wmkhku'r gt"qtcpì " ? $\frac{1 \text{ hari}}{0,66 \text{ hari}} \times 1 \text{ m}^2$ "

" " " " ? "3.737'o 4"

F k gpecpcncp'lwo nçj "i twr " ? "4'i twr "

Mçr cukcu'r tqf wmk"*S v+" ? " "i twr "z"r tqf wmkhku"

" " " " ? "4z42+i twr "z"3.737'o 4"

" " " " ? "82.82'o 4j ctk"

f0 Y cmw"

Y cmw" ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? $\frac{860,63 \text{ m}^2}{60,60 \text{ m}^2/\text{hari}}$? "36.4"j ctké "37"j ctk"

g0 Dkc{c"{cpi "f k gtnwncp"

F kcuwo uknep" dgnkukpi " fki wpcnep" ugdep{cni' 4z"
r go cnekc0Ugi kpi i c'r cf c't gpi i wpccp'hgf wc'harkp{c"
f kco dcj '47' "p{c"
Dlc{c" " ?"xqnwo g'z'pkckkJ URM"
" " " ?": 82.85'o 4"z'Tr 05; : 022./"
" " " ?"Tr 056407530: 4.98"
F ki wpcnep'4'hark" ?"Dlc{c'z'97' " "
" " " ?"Tr 056407530: 4.98"z'97' " "
" " " ?"Tr 04780 ; : 0 59.29"

6070204 "Rngntlccp"Rgo dgukcp"
Rngntlccp" r rngntlccp" r go dgukcp"
dcqn'f kngtlcnep"f gpi cp"dcj cp"dgu'wkt"f cp"
r qrqu" ugtv" o gpi i wpcnep" vpci c" o cpwuk"
wpwn' r go cucpi cpp{c0' F ko cpc" f cno " ucw"
i twr " vgtf k'k' fctk' O cpf qt." ngr cnc" wnepi ."
wnepi ."f cp'r go dcpw'wnepi 0Dgtknw'cperkuc"
J URM" 4237" Rngntlccp" r go dgukcp" dcqn'
*Vcdgn' 60: " P kck' J URM" 4237" Uwtcdc{c' /"
Rngntlccp" r go dgukcp" f gpi cp" Dguk" Dgvqp"
*r qnqulwkt+"<

24.03.01.14	Pekerjaan Pembesian dengan Besi Beton (ulir/polos)	kg	SNI 7394 :2008 (6.17)		
<u>Upah :</u>					
23.02.04.01.01.F	Mandor	0,0004	O.H	120.000	48
23.02.04.01.02.F	Kepala Tukang besi	0,0007	O.H	110.000	77
23.02.04.01.03.F	Tukang Besi	0,007	O.H	105.000	735
23.02.04.01.04.F	Pembantu Tukang	0,007	O.H	99.000	693
Jumlah:				1.553	
<u>Bahan:</u>					

20.01.01.09.01.01	Besi Beton (polos)	1,05	Kg	12.000	12.600
.F	d 10 mm				
20.01.01.35.02.01	Kawat Beton	0,015	kg	23.000	345
.F					
Jumlah:				12.945	
Nilai HSPK :				14.498	

c0 Xq~~n~~wo g'r g~~n~~gtlccp" " ? "420 99"mi "

d0 Lwo ~~ncj~~ "ngdwwj cp"lwo dgt"f c{c"

O cpf qt" " ? $\frac{0,0004}{0,0004} \times 1 \text{ grup}$? "3"Qtcp~~i~~ "

M~~gr~~ cr~~e~~"Vwncpi " ? $\frac{0,0007}{0,0004} \times 1 \text{ grup}$? "4"Qtcp~~i~~ "

Vwncpi " " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$? "3: "Qtcp~~i~~ "

Rgo dcpw"Vwncpi " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$? "3: "Qtcp~~i~~ "

e0 M~~cr~~ cukcu'r tqf w~~nk~~"*S v~~t~~" "

Rtqf w~~nk~~h~~ku~~'r gt"qtcp~~i~~ " ? $\frac{1 \text{ hari}}{0,007 \text{ hari}} \times 1 \text{ kg}$ "

" " " " ? "364.: 79"mi "

F k~~g~~pecpcncp"lwo ncj "i twr " ? "3"i twr "

M~~cr~~ cukcu'r tqf w~~nk~~"*S v~~t~~" ? " "i twr "z"r tqf w~~nk~~h~~ku~~"

" " " " ? "3z3: i twr "z"364.: 8mi "

" " " " ? "40793.65"mi lj ctk"

f0 Y cmw"

Y cmw" ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? $\frac{20.977 \text{ kg}}{2.571,43 \text{ kg/hari}}$ "? ".38"j ctk~~e~~ ", "j ctk"

g0 Dlc{c" {cpi "f k~~g~~tnwncp"

Dlc{c" ? "xq~~n~~wo g'z"p~~k~~ckJ URM"

" " ? "420 99"z"Tr 03606; : ./"

" " ? "Tr 05260846066.: 2"

60/0205 Rngntlccp"Rgpi geqtcg"

Rngntlccp" r rngntlccp" r gpi geqtcg"
 dcmn' f kngtlcncp" o gpi i wpcncp" dgvp" tgc { "
 o kz "ugj lpi i c" dwwj "cncv" dgte" eqpetgvg" r wo r "
 f cp" vwm' o kz gt." ugtc" vpci c" o cpwuk"
 dgte fuctncp" J URM' 42370' Dgtknw" cpcikuc"
 J URM' 4237" Rngntlccp" r gpi geqtcg" dcmn'
 *Vcdgn' 60; " P kck' J URM' 4237" Uwtcdc { c" /"
 Rngntlccp" Dgvp" M/522+"<

24.03.01.10	Pekerjaan Beton K-300	m3	SNI 7394 :2008 (6.7)		
<u>Bahan :</u>					
20.01.01.02.01.F	Semen PC 40 Kg	10,33	Zak	63.000	650.475
20.01.01.04.04.F	Pasir Cor/Beton	0,425	m³	232.100	98.787
20.01.01.05.04.01 .F	Batu Pecah Mesin ½ cm	0,537	m³	466.000	250.413
23.02.02.02.01.F	Air Kerja	215	Liter	27	5.805
				Jumlah:	1.005.481
<u>Upah :</u>					
23.02.04.01.01.F	Mandor	0,083	O.H	120.000	9.960
23.02.04.01.02.F	Kepala Tukang batu	0,028	O.H	110.000	3.080
23.02.04.01.03.F	Tukang Batu	0,275	O.H	105.000	28.875
23.02.04.01.04.F	Pembantu Tukang	1,65	O.H	99.000	163.350
				Jumlah:	205.265
				Nilai HSPK :	1.210.746

c0 Xqno g'r rngntlccp" " ? "333.; 3'o 5"

d0 Lwo ncj 'ngdwwj cp' lwo dgt' f c { c"

O cpf qt" " ? $\frac{0,083}{0,083} \times 1 \text{ grup}$? "3"Qtcp" "

Mgr cnc' Vwncpi " ? $\frac{0,028}{0,083} \times 1 \text{ grup}$? "3"Qtcp" "

Vwncpi " " ? $\frac{0,275}{0,083} \times 1 \text{ grup}$? "6"Qtcpi "

Rgo dcpw/Vwncpi " ? $\frac{1,65}{0,083} \times 1 \text{ grup}$? "43"Qtcpi "

e0 Rtqf wmkxku" "

- F kcuwo ukncp" nupf luk' qr gtcuk' crcv' f cp" r go grlj etcep"o gulk" f crco "nupf luk' dclni" *2.97+ " *Vcdgni' 6042" Ghukgpkuk' Qr gtcukqpcn' Crvc' f cp" Rgo grlj etcep-0

Mqpf luk' Qr gtcuk'Crvc'	Rgo grlj etcep'Crvc'				
	Dclni' Ugnrk'	Dclni'	Ugf cpi "	Dwtwni'	Dwtwni' Ugnrk'
Dclni'Ugnrk'	2.: 5"	2.: 3"	2.98"	2.92"	2.85"
Dclni'	2.9: "	2.97"	2.93"	2.87"	2.82"
Ugf cpi "	2.94"	2.8: "	2.87"	2.82"	2.76"
Dwtwni'	2.85"	2.83"	2.79"	2.74"	2.67"
Dwtwni'Ugnrk'	2.74"	2.72"	2.69"	2.64"	2.54"

*imo dgt " < ' Dmw' Tghgt gpuk' wpmw' Mqpv cmqt "

Dcpi wpcp'I gf wpi 'f cp'Ukr k02250J cn'763+ "

- F kcuwo ukncp" Mgo co r wcp" qr gtcvqt" f knvcgi qtkncp" vgtco r kn' *2.: 2+ " *Vcdgni' 6043" Mwrkhkneuk'Mvgvtco r kcp'Qr gtcvqt-0

Mwrkhkneuk'	K gpvku"	P kck'
Vgtco r kn'	c0Rgpf kf knep'UVO lugf gtclev' d0Ugtvkhkneuk'UKO RIUkRR"Kk'f cp" cvcw' e0Rgpi crco cp"@8222'Ico "	2.: 2"
Ewmw "	c0Rgpf kf knep'UVO lugf gtclev' d0Ugtvkhkneuk'UKO RIUkRR"Kk'f cp'cvcw' e0Rgpi crco cp"6222'6'8222'Ico "	2.92"
Ugf cpi "	c0Rgpf kf knep'UVO lugf gtclev' d0Ugtvkhkneuk'UKO RIUkRR"Kk'f cp'cvcw' e0Rgpi crco cp"4222'6'6222'Ico "	2.87"
Mwncpi "	c0Rgpf kf knep'UVO lugf gtclev' d0Ugtvkhkneuk'f cp'cvcw'	2.72"

	e0Rgpi cmo cp">"5222"lco "	
--	----------------------------	--

**uwo dgt " <' Dmw" Tglgt gpuk" wpmw' Mqpyt cmqt "*

Dcpi wpcp"l gf wpi 'f cp"Uk-k042250J cn764+"

- F lcuwo uknep"mqpf kuk'ewcec"Vgtcpi . "Ugi ct"*2.; 2+"

*Vcdgn'6044"Mqpf kuk'Ewcec-0'

"

Mqpf kuk'Ewcec"	Hcmqt"	
	O gpkwllco "	' "
Vgtcpi . "Ugi ct "	77 82"	2.; 2"
Vgtcpi . "Rcpu."Dgtf gdw"	72 82"	2.; 5"
O gpf wpi "	67 82"	2.97"
I grcr "	62 82"	2.88"

**uwo dgt " <' Dmw" Tglgt gpuk" wpmw' Mqpyt cmqt "*

Dcpi wpcp"l gf wpi 'f cp"Uk-k042250J cn764+"

- Qwr w'r kwp'ukf g'f ctk'eqpetgvg'r wo r "
- ? "334"o ⁵llco "uwo dgt "<dtquw"eqpetgvg'r wo r +"
- ? "334"o ⁵llco "z"2.97"z"2.: "z"2.; "? "82.6: "o ⁵llco "
- Lwo rcj " twnl' o kzgt " *ner cukcu" 9" o ⁵+ " {cpi " fkdwwj nep"<

- tvenl' kzgt " ? " $\frac{\text{Volume}}{\text{kapasitas mixer}}$ " ? " $\frac{111,91 \text{ m}^3}{7 \text{ m}^3}$ "
- " ? "37.; : "é"38"tvenl'

- Rtqf wmlkscu'r gt"j ctk'

? " $\frac{\text{Volume}}{\text{banyak hari}}$ " ? " $\frac{111,91 \text{ m}^3}{5 \text{ hari}}$ " ? "44.5: 4"o ⁵lj ctk'

- Dcp{cnl'tvenl' kzgt'r gt"j ctk'

? " $\frac{\text{Produktifitas}}{\text{kapasitas mixer}}$ " ? " $\frac{22,382 \text{ m}^3/\text{hari}}{7 \text{ m}^3}$ "

? "5.3; 9"é"6"tvenlj ctk'

f0 Y cmw'

- Y cmw'r gtukcr cp"*3+"

Rgpi cwtcp'r quuk" ? "32"o gpkv"

Rgo cucpi cp'r kr c" ? "52"o gpkv"

- $$\frac{\text{Kng}'\text{'tvenlo kz gt}''}{''''''} \quad ? \text{'32'o gpk}'$$

$$'''''' \quad ? \text{'72'o gpk}'$$
- Y cmw'qr gtcukqpcn''4+''

$$? \frac{\text{Volume}}{\text{output concrete pump}} \frac{111,91 \text{ m}^3}{60,48 \text{ m}^3 / \text{jam}} \times 60 \text{ ''}$$

$$? \text{'333.244'o gpk}'$$
 - Y cmw'co dcj ''5+''

$$\frac{\text{Rgpti cp'kcp}'\text{'tvenl}''}{\text{Wk'uno r}''} \quad ? \text{'32'o gpk}'$$

$$'''''' \quad ? \text{'7'o gpk}'$$

$$'''''' \quad ? \text{'37'o gpk}'$$
 - Y cmw'r cuec'r grncucpccp''6+''

$$\text{Rgo dgtulj cp'r qo r c}'' \quad ? \text{'32'o gpk}'$$

$$\text{Rgo dqpi nctcp'r kr c}'' \quad ? \text{'52'o gpk}'$$

$$\frac{\text{Rgtulcr cp}'\text{'ngo dcrk}''}{''''''} \quad ? \text{'32'o gpk}'$$

$$'''''' \quad ? \text{'72'o gpk}'$$
 - Vqven'ly cmw''

$$? \text{'4- ''3- ''5- ''6+z}'' \text{ tvenlo kz gt}''$$

$$? \text{'333.244'o gpk}' - \text{'72'o gpk}' - \text{'37'o gpk}' - \text{'72'o gpk} \div \text{'38'tvenl}''$$

$$? \text{'3; 73.244'o gpk}' \text{'82'o gpk}'$$

$$? \text{'54.739'lco 'l': 'lco 'ngt'lc}''$$

$$? \text{'6.286'j ctk'6'7'j ctk}'$$
- g0 Dkc{c''{cpi 'f kr gtnwncp''
- Dkc{c'dgwqp''''

$$\text{Dkc}\{c'''' \quad ? \text{'xqnxo g'z'pkrck'J URM}'$$

$$'''' \quad ? \text{'333.; 3'o }^5\text{'z'Tr 00432068./''}$$

$$'''' \quad ? \text{'Tr 035706; 60834.69''}$$
 - Dkc{c'ugy c'crv''? 'Tr 09022022./152'o }^5''

$$\text{*Uwo dgt}'' \text{'RV0Xctkc'Wucj c'Dgwqp}''$$

$$\text{Wpwnlr gt'o }^5\text{'? 'Tr 0455055./''}$$

$$? \text{'Tr 0455055./''z'333.; 3'o }^5\text{'}$$

$$? \text{'Tr 048034055.55''}$$
 - Vqven'dkc{c''

? "Dk{c"- "Dk{c'ugy c'crev"

? "Tr 035706; 60834.69"- "Tr 048034055.55"

? "Tr 03830280 67.: 3"

6070206 Rngntlccp'Rgo dqpi netcp'Dgnkukpi "

Rngntlccp" r go dqpi netcp" dgnkukpi " dcnqm'
f kngtlnep" f gpi cp" o go dqpi net" dgnkukpi 0'
F lo cpc" f cno " ucw" i twr " vgtf kK" f ctK" O cpf qt."
ngr cnc" wncpi ." wncpi " f cp" r go depw" wncpi 0"
Cperkuc" r gtj kwpi cp" f wtuk" r go dqpi netcp"
dgnkukpi "o gpi i wpcnep" cperkuc" ectc" o qf gtp" f ctK'
dwnw" Uqgf tclcw' *3; ; 6-0' Cperkuc" *ectc" o qf gtp+"
cpi i ctc p'dk{c" r grncpccp. "ugr gt k'dgtknw"2

Vedgi6053'Lco 'hgtlc'dgnkukpi 'lcr 'hucup'32'o 4"

P q0'	Igpku'Egvcnep" Mc{w'	Lco 'hgtlc'uglcr 'huc'egvcnep'32'o 4"			
		O gp{gvgn'	O go cucpi "	O go dwnc'f cp" O go dgtukj nep"	Tgr ctcuk'
3"	Rqpf cukr cpi m cn'lgo dcvp"	5/9"	4/6"	4/6"	4/7"
4"	F kpf kpi "	7/; "	5/7"	4/7"	4/7"
5"	Ncpck'	5/: "	4/6"	4/6"	4/7"
6"	Cvcr "	5/; "	4/7"	4/6"	4/7"
7"	Vlcpi "	6/: "	4/6"	4/6"	4/7"
8"	Mgr cnc"Vlcpi "	7/33"	5/9"	4/7"	4/7"
9"	Dcnqm'dcnqm'	8/32"	5/6"	4/7"	4/7"
:	Vcpi i c/ vpi i c"	8/34"	6/: "	5/7"	4/7"
;	Uwf w'vlepi " f cp'dcnqm' dgtwnk"	7/33"	5/; "	5/7"	4/7"
32"	Co dcpi " lgpf grc'f cp" rkpgn'	7/32"	5/8"	5/7"	4/7"

c0 Xqno g'r gngtlccp" " ?": 82.85"o 4"

d0 Lwo nj 'ngdwwj cp'wwo dgt'f c{c"

O cpf qt " " ? $\frac{0,033}{0,033} \times 1 \text{ grup}$? "3"Qtcp " "

Mgr cr "Vwncpi " ? $\frac{0,033}{0,033} \times 1 \text{ grup}$? "3"Qtcp " "

Vwncpi " " ? $\frac{0,33}{0,033} \times 1 \text{ grup}$? "32"Qtcp " "

Rgo dcpw"Vwncpi " ? $\frac{0,66}{0,033} \times 1 \text{ grup}$? "42"Qtcp " "

e0 Mcr cukcu'r tqf wmk'*S v+' " "

Uguwck' f gpi cp" wcdgn' 6045." dej y c" lco " ngtlc" wpwni
o go dwnc" f cp" o go dgtukj ncp" egvncp" lgpu" kcp " "
cf crj "ugro c" 4/7"lco " *' f ki wpcncp" 4"lco " 1'32" o 4"
dgnkukpi +0"

f0 Y cmw'

Y cmw"" ? $\frac{\text{Volume}}{10 \text{ m}^2} \times 2 \text{ jam}$ ""

" " ? $\frac{860,63 \text{ m}^2}{10 \text{ m}^2} \times 2 \text{ jam}$? "394.35"lco "é"44"j ctk'

g0 Rtqf wmkxkcu"

Rtqf wmkxkcu" ? $\frac{\text{volume}}{\text{durasi}} = \frac{860,63 \text{ m}^2}{23 \text{ hari}}$ "
? "5; .34"o 4"l'j ctk'

60703 Rngntlccp"Rrcv'F gnlvgdcn'34"eo "

607030 Rngntlccp"Dgnkukpi "

Rngntlccp"r ngntlccp"dgnkukpi "r rcv' f gni'
f ngtlcncp" f gpi cp" dej cp" o wmkrgnu' f cp"
o gpi i wpcncp" vpci c" o cpwukc0' F ko cpc" f crco "
ucw" i twr " vgtf k' f ctk' O cpf qt." ngr cr " wncpi ."
wncpi . " f cp" r go dcpw' wncpi 0' Dgtknw" cpcrluc"
J URM4237"Rngntlccp"dgnkukpi "r rcv'<

Vedgn6054'PkrKJ URM4237'Uwtcdc{c'}'Rngntlccp'Dgnkmpj 'Ncpvck'

24.03.01.19	Pekerjaan Bekesting Lantai	m2	SNI 7394 :2008 (6.21)		
Upah :					
23.02.04.01.01.F	Mandor	0,033	O.H	120.000	3.960
23.02.04.01.02.F	Kepala Tukang Kayu	0,033	O.H	110.000	3.630
23.02.04.01.03.F	Tukang Kayu	0,33	O.H	105.000	34.650
23.02.04.01.04.F	Pembantu Tukang	0,66	O.H	99.000	65.340
				Jumlah:	107.580
Bahan:					
20.01.01.43.04.06 .F	Kayu meranti bekesting	0,04	m3	3.200.000	128.000
20.01.01.28.04.04 .F	Paku Triplek	0,4	Kg	22.000	8.800
20.01.02.01.06.F	Manyak bekesting	0,2	liter	28.300	5.660
20.01.01.43.03.04 .F	kayu Kamper balok 4/5	0,015	m3	6.400.000	96.000
20.01.01.34.02.F	Plywood tebal 9 mm	0,35	lem bar	93.600	32.760
				Jumlah:	271.220
				Nilai HSPK :	378.800

c0 Xqno g'r gngtlccp" " ?": 55.5: 5'o 4"

d0 Lwo nj 'ngdwwj cp'owo dgt'fc{c"

O cpf qt" " ? $\frac{0,033}{0,033} \times 1$ grup"? 3"Qtcpi "

Mgr cr"Vwncpi " ? $\frac{0,033}{0,033} \times 1$ grup"? 3"Qtcpi "

Vwncpi " " ? $\frac{0,330}{0,033} \times 1$ grup"? 32"Qtcpi "

Rgo dcpw"Vwncpi " ? $\frac{0,660}{0,033} \times 1$ grup"? 42"Qtcpi "

e0 Mrcukcu'r tqf wnik'*S v+' " "
 Rtqf wnik'kcu'r gt'qtcp' " ? " $\frac{1 \text{ hari}}{0,66 \text{ hari}} \times 1 \text{ m}^2$ " "
 " " " " ? "3.737"o⁴" "
 F ktgpcpcncp' lwo n'j 'i twr " ? "4'i twr "
 Mrcukcu'r tqf wnik'*S v+' ? " 'i twr 'z' r tqf wnik'kcu'r "
 " " " " ? "4z42+'i twr 'z' "3.737"o⁴" "
 " " " " ? "82.82"o⁴ j ctK"

f0 Y cmw' "
 Y cmw' ? " $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ " "
 " " ? " $\frac{833,383 \text{ m}^2}{60,60 \text{ m}^2/\text{hari}}$ " ? "35.97"j ctKé "36"j ctK"

g0 Dlc{c'" {cpi 'f k' gtnwncp" "
 F kcuwo ukncp" dgnkukpi " f ki wpcncp" ugdec{cni' 4z" "
 r go cncckp0Ugj kpi i c'r cf c'r gpi i wpccp'ngf wc'ncrkp{c" "
 f kco dcj '47' "p{c" "
 Dlc{c" " ? "xqnxo g'z'pkck'J URM" "
 " " " ? "55.5: "o⁴z'Tr 059: 0 22./" "
 " " " ? "Tr 053608: 70827.62" "
 F ki wpcncp'4'ncrk" ? "Dlc{c'z'97' " "
 " " " ? "Tr 053608: 70827.62z'97' " "
 " " " ? "Tr 04580860426.27"

6070304 Rngtclccp"Rgo dgulcp"

Rngtclccp"r gngtclccp"r go dgulcp"r rcv'f gni' "
 f kngtclncp" f gpi cp' dcj cp' dguk'wkt' f cp' r qru'u'gtw' "
 o gpi i wpcncp" v'gpc' c" o cpwuk' w'pwm' "
 r go cucpi cpp{c0'F ko cpc' f c'co "ucw' i twr "vgtf k'k' "
 f ctK0 c'p' qt. 'hgr c'nc'wncpi . 'wncpi . 'f cp' r go dcpw' "
 wncpi 0' Dgtknw' cpcrkuc' J URM" 4237" Rngtclccp" "
 r go dgulcp" r rcv' *Vcdgn' 608: " P kck' J URM" 4237" "
 Uwtcdc{c' / " Rngtclccp" r go dgulcp" f gpi cp' Dguk' "
 Dgvqp '*r qru'lwkt+'<" "

24.03.01.14	Pekerjaan Pembesian dengan Besi Beton (ulir/polos)		kg	SNI 7394 :2008 (6.17)	
Upah :					
23.02.04.01.01.F	Mandor	0,0004	O.H	120.000	48
23.02.04.01.02.F	Kepala Tukang besi	0,0007	O.H	110.000	77
23.02.04.01.03.F	Tukang Besi	0,007	O.H	105.000	735
23.02.04.01.04.F	Pembantu Tukang	0,007	O.H	99.000	693
Jumlah:				1.553	
Bahan:					
20.01.01.09.01.01.F	Besi Beton (polos) d 10 mm	1,05	Kg	12.000	12.600
20.01.01.35.02.01.F	Kawat Beton	0,015	kg	23.000	345
Jumlah:				12.945	
Nilai HSPK :				14.498	

c0 Xqmw g'r gngtlccp" " ?"33027"mi "

d0 Lwo rj 'ngdwwj cp'lw0 dgt'f c{c"

O cpf qt" " ? $\frac{0,0004}{0,0004}$ 1 grup"? "3"Qtcp " "

Mgr cr'Vwncpi " ? $\frac{0,0007}{0,0004}$ 1 grup"? "4"Qtcp " "

Vwncpi " " ? $\frac{0,007}{0,0004}$ x 1 grup"? "3: "Qtcp " "

Rgo dcpw'Vwncpi " ? $\frac{0,007}{0,0004}$ x1 grup"? "3: "Qtcp " "

e0 Mcr cukcu'r tqf wmk" "S v+" " "

Rtqf wmkxkcu'r gt'qtcp " ? $\frac{1 \text{ hari}}{0,007 \text{ hari}}$ x1 kg"

" " " " ? "364.: 79"mi "

F kgpecpcncp'lwo rj "i twr " ? "3"i twr "

Mcr cukcu'r tqf wmk" "S v+" ? " "i twr "z'r tqf wmkhku"

" " " " ? '*3z3: -i twr "z"364.: 8ni "

" " " " ? "'40793.65"ni lj ctk"

f0 Y cmw'

Y cmw' ? " $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? " $\frac{11.705 \text{ kg}}{2.571,43 \text{ kg/hari}}$ "? "6.77"j ctk'ë "7"j ctk"

g0 Dlc{c"}{cpi "f k gt n w n e p"

Dlc{c" ? "xq n w o g "z "p k r k 'J URM"

" " ? "33027"z "Tr 03606; : ./"

" " ? "Tr 052608460277.: 2"

6070305 Rngntlccp"Rgpi geqtc p"

Rngntlccp"r rngtlccp"r gpi geqtc p"r n v'
 f g n' f k n g t l c n e p" o g p i i w p c n e p" d g v q p" t g c f { "
 o k z "u g j k p i i c "d w w j "c n v' d g t e v' e q p e t g v g' r w o r "
 f c p" v t w n' o k z g t. " u g t v c" v g p c i c" o c p w u k c"
 d g t f c u c t n e p" J URM" 42370' D g t k n w' c p c r k u c"
 J URM" 4237" Rngntlccp"r gpi geqtc p"r n v' f g n'
 *V e d g n' 606; " P k r k 'J URM" 4237" U w t c d c { c" /"
 Rngntlccp" D g v q p " M / 522 + " < "
 "

24.03.01.10	Pekerjaan Beton K-300	m3	SNI 7394 :2008 (6.7)		
Bahan :					
20.01.01.02.01.F	Semen PC 40 Kg	10,33	Zak	63.000	650.475
20.01.01.04.04.F	Pasir Cor/Beton	0,425	m³	232.100	98.787
20.01.01.05.04.01.F	Batu Pecah Mesin ½ cm	0,537	m³	466.000	250.413
23.02.02.02.01.F	Air Kerja	215	Liter	27	5.805
Jumlah:				1.005.481	
Upah :					
23.02.04.01.01.F	Mandor	0,083	O.H	120.000	9.960

23.02.04.01.02.F	Kepala Tukang batu	0,028	O.H	110.000	3.080
23.02.04.01.03.F	Tukang Batu	0,275	O.H	105.000	28.875
23.02.04.01.04.F	Pembantu Tukang	1,65	O.H	99.000	163.350
Jumlah:					205.265
Nilai HSPK :					1.210.746

c0 Xqⁿwo g'r gngtlccp" " ? "322.23"o 5"

d0 Lwo rcj "ngdwwj cp'uwo dgt'f c{c"

O cpf qt" " ? $\frac{0,083}{0,083} \times 1 \text{ grup} ? "3"Qtcpi "$

Mgr crc"Vwncpi " ? $\frac{0,028}{0,083} \times 1 \text{ grup} ? "3"Qtcpi "$

Vwncpi " " ? $\frac{0,275}{0,083} \times 1 \text{ grup} ? "6"Qtcpi "$

Rgo dcpw"Vwncpi " ? $\frac{1,65}{0,083} \times 1 \text{ grup} ? "43"Qtcpi "$

e0 Rtqf wmkxkcu" " "

- Fkcuwo ukncp" mⁿpf kuk' qr gtcuk' crcv" f cp"
r go grkj ctccp"o gulk"fcrc "mⁿpf kuk'dckn' *2.97+ "
*Vcdgn' 6042" Gⁿukcpuk" Qr gtcukpcn' Crcv" f cp"
Rgo grkj ctccp-0

M ⁿ pf kuk' Qr gtcuk'Crcv'	Rgo grkj ctccp'Crcv'				
	Dckn' Ugnenk'	Dckn'	Ugf cpi "	Dwtwnl'	Dwtwnl' Ugnenk'
Dckn'Ugnenk'	2.: 5"	2.: 3"	2.98"	2.92"	2.85"
Dckn'	2.9: "	2.97"	2.93"	2.87"	2.82"
Ugf cpi "	2.94"	2.8; "	2.87"	2.82"	2.76"
Dwtwnl'	2.85"	2.83"	2.79"	2.74"	2.67"
Dwtwnl'Ugnenk'	2.74"	2.72"	2.69"	2.64"	2.54"

"uwo dgt" <" Dwmw" Tghgt gpuk" wpwmi' Mqpvⁿcmqt "
Dcpi wpcp'I gf wpi 'f cp'Ukr-k042250J cn'763+"

- F kcuwo uknep" Mgo co r wcp" qr gtcvqt" f knēvgi qtknep" vgtco r kn' *2.: 2+" " *Vcdgn' 6043" Mwerhknēuk'Mvgtco r knep"Qr gtcvqt+"0'

Mwerhknēuk'	K gpvksu'	P knk'
Vgtco r kn'	cORgpf kf knep"UVO lufg gteclv' dUgtvknēuk'UKO RIURR"Kf cp"cvw" eORgpi crco cp"@8222'lco "	2.: 2"
Ewnw "	cORgpf kf knep"UVO lufg gteclv' dUgtvknēuk'UKO RIURR"Kf cp"cvw" eORgpi crco cp"6222'6'8222'lco "	2.92"
Ugf cpi "	cORgpf kf knep"UVO lufg gteclv' dUgtvknēuk'UKO RIURR"Kf cp"cvw" eORgpi crco cp"4222'6'6222'lco "	2.87"
Mwtcpi "	cORgpf kf knep"UVO lufg gteclv' dUgtvknēuk'f cp"cvw" eORgpi crco cp">"5222'lco "	2.72"

*iwo dgt " < Dmw" Tglgt gpuk' wpmn' Mqpv cmqt " Dcpi wpcp'I gf wpi 'f cp"Urk02250J cn'764+"

- F kcuwo uknep"nqpf kuk'ewcec"Vgtcpi ."Ugi ct"*2.: 2" *Vcdgn'6044"Mqpf kuk'Ewcec+0'

Mqpf kuk'Ewcec"	Hcmqt"	
	O gpkvllco "	' "
Vgtcpi ."Ugi ct"	77 82"	2.: 2"
Vgtcpi ."Rcpca."Dgtf gdw"	72 82"	2.: 5"
O gpf wpi "	67 82"	2.97"
I grrr "	62 82"	2.88"

*iwo dgt " < Dmw" Tglgt gpuk' wpmn' Mqpv cmqt " Dcpi wpcp'I gf wpi 'f cp"Urk02250J cn'764+"

- Qwr w'r knqp'ukf g'f ctk'eqpetgvg'r wo r " ? "334'o ⁵llco "iwo dgt "<dtquw'eqpetgvg'r wo r +" ? "334'o ⁵llco "z'2.97'z'2.: 'z'2.; '? '82.6: 'o ⁵llco " - Lwo ncj " twnl' o kzgt " *ner culksu" 9" o ⁵+" {cpi " f kdwvj næp"<

? "3964.45: "o gpk/I'82"o gpk"

? "4; .259"lco "I: "lco "ngtlc"

? "5.84; "j ctk'ë "6"j ctk"

g0 Dlc{c" {cpi "f k gtñwñep"

- Dlc{c"dgvp""

Dlc{c"" ? "xqñwo g"z "pkck'I URM"

" " ? "322.23""o ⁵"z"Tr 0432068./"

" " ? "Tr 034302: 8054.37"

- Dlc{c"ugy c"crv"? "Tr 090222022./152"o ⁵"

*Uwo dgt"<RV0Xctlc"Wucj c"Dgvp+"

Wpwnlr gt"o ⁵"? "Tr 0455055./"

? "Tr 0455055./""z"322.23o ⁵"

? "Tr 0450570888.89"

- Vqverldlc{c"

? "Dlc{c"- "Dlc{c"ugy c"crv"

? "Tr 034302: 8054.37"- "Tr 0450570888.89"

? "Tr 036606440; : .: 2"

600306 Rngtllcp"Rgo dqpi ñetcp"Dgnkñpi "

Rngtllcp" r go dqpi ñetcp" dgnkñpi " r rñv"
 rñpck"flngtlcñep"f gpi cp"o go dqpi ñet"dgnkñpi 0'
 F kò cpc" f crco " ucw" i twr " vgtf k'k' f ctk' O cpf qt."
 ngr crc" wñepi ." wñepi " f cp" r go dcpw" wñepi 0"
 Cpcrkuc" r gtj kwpi cp" f vtcuk" r go dqpi ñetcp"
 dgnkñpi "o gpi i wpcñep"cpckuc"ectc"o qf gtp"f ctk'
 dwnw" Uqgf tclew0 *3; ; 6+0' Cpcrkuc" *ectc"o qf gtp+"
 cpi i ctc p"dlc{c"r grc mcpccp. "ugr gt v'k'dgt knw"<

Vcdgrt6055'Lco 'ngtlc'dgnkñpi 'lcr 'hwucp'32'b 4"

P q0	Igpku'Egcnep" Mc{w'	Lco 'ngtlc'ugker 'ñcu'egcnep'32"o 4"			
		O gp {gvñi"	O go cucpi "	O go dwñc"fc p" O go dgtulj ñep"	Tgr ctcuk"
3"	Rqpf cukr cpi m cñlgo dcvc p"	5/9"	4/6"	4/6"	4/7"

P q0'	Igpku'Egvcnep" Mc{w'	Lco 'ngtlc'ugvkr'hcu'egvcnep"32'o 4"			
		O gp{gvgi'	O go cucpi "	O go dwnc'f cp" O go dgtukj nep"	Tgr ctcuk'
4"	F kpf lpi "	7/; "	5/7"	4/7"	4/7"
5"	Ncpck'	5/; "	4/6"	4/6"	4/7"
6"	Cxcr "	5/; "	4/7"	4/6"	4/7"
7"	Vlcp i "	6/; "	4/6"	4/6"	4/7"
8"	Mgr crc"Vlcp i "	7/33"	5/9"	4/7"	4/7"
9"	Dcnjndcnjnl'	8/32"	5/6"	4/7"	4/7"
: "	Vcp i c/ xcp i c"	8/34"	6/; "	5/7"	4/7"
; "	Uwfw'vlcp i " f cp'dcnjnl' dgtwnk "	7/33"	5/; "	5/7"	4/7"
32"	Co dcp i " lgpf grc'f cp" rkpgnl'	7/32"	5/8"	5/7"	4/7"

c0 Xqno g'r gngtlccp" " ?": 55.5: "o 4"

d0 Lwo nj "ngdwwj cp"lwo dgt'f c{c"

O cpf qt" " ? $\frac{0,033}{0,033} \times 1 \text{ grup}?$ "3"Qtcp i "

Mgr crc"Vwncpi " ? $\frac{0,033}{0,033} \times 1 \text{ grup}?$ "3"Qtcp i "

Vwncpi " " ? $\frac{0,33}{0,033} \times 1 \text{ grup}?$ "32"Qtcp i "

Rgo dcpw"Vwncpi " ? $\frac{0,66}{0,033} \times 1 \text{ grup}?$ "42"Qtcp i "

e0 Mcr cukcu'r tqf wnk"*S vt"" "

Uguwck'f gpi cp" vcdgn' 6045." dcj y c" lco " ngtlc" wpwnl'
o go dwnc' f cp" o go dgtukj nep" egvcnep" Igpku" vlcp i "
cf crcj "ugnc c" 4/6" lco " *f ki wpcncp" 4" lco " l' 32" o 4"
dgnkukpi +0"

f0 Y cmw'

$$Y \text{ cmw}'''? \frac{\text{Volume}}{10 \text{ m}^2} \times 2 \text{ jam}'''$$

$$'' \quad ''''''''''? \frac{833,38 \text{ m}^2}{10 \text{ m}^2} \times 2 \text{ jam}''? 388.8: ''\text{lco} \text{ ''é}''43''\text{j} \text{ ctK}''$$

g0 Rtqf wmkxkcu''

$$\text{Rtqf wmkxkcu}'' \quad ? \frac{\text{volume}}{\text{durasi}} = \frac{833,38 \text{ m}^2}{21 \text{ hari}} ''$$

$$? ''5; .8: ''\text{o}^4\text{l}''\text{j} \text{ ctK}''$$

608 RGMGTLCPP'VCPI I C'DGVQP'''

60808 Rngmtlccp''Vcpi i c''C''

60808 Rngmtlccp''Dgnkukpi ''

Rngmtlccp''r rngmtlccp''dgnkukpi ''vcpi i c''C''
f kngtlnep'' f gpi cp'' dcj cp'' o wnk rgmu'' f cp''
o gpi i wpcnep''vgpci c''o cpwuk0F ko cpc''f cno ''ucw''
i twr ''vgtf k'k''f ctK''O cpf qt.''ngr cr''wncpi .''wncpi .''
f cp''r go dcpw''wncpi 0Dgtknw''cpcrkuc''J URM4237''
Rngmtlccp''dgnkukpi ''vcpi i c''C''<''

Vcdgn6056'PlckKJ URM4237'Uwtcdc{ c/'Rngmtlccp''Dgnkukpi ''Vcpi i c''

24.03.01.20	Pekerjaan Bekesting Tangga	m2	SNI 7394 :2008 (6.23
Upah :			
23.02.04.01.01.F	Mandor	0,033	O.H 120.000 3.960
23.02.04.01.02.F	Kepala Tukang Kayu	0,033	O.H 110.000 3.630
23.02.04.01.03.F	Tukang Kayu	0,33	O.H 105.000 34.650
23.02.04.01.04.F	Pembantu Tukang	0,66	O.H 99.000 65.340
107.580			
Bahan:			
20.01.01.43.04.06 .F	Kayu meranti bekesting	0,03	m3 3.200.000 96.000

20.01.01.28.04.04.F	Paku Triplek	0,4	Kg	22.000	8.800
20.01.02.01.06.F	Manyak bekesting	0,2	liter	28.300	5.660
20.01.01.43.03.04.F	kayu Kamper balok 4/5	0,015	m3	6.400.000	96.000
20.01.01.34.02.F	Plywood tebal 9 mm	0,35	lembar	93.600	32.760
				290.420	237.805
				Nilai HSPK :	345.385

c0 Xq_nw_o g'r g_ng_tlccp" " ? "66.83"o⁴"

d0 Lwo n_j "ngdwwj cp'uwo dgt"fc{c"

O cpf qt" " ? $\frac{0,033}{0,033} \times 1$ grup"? "3"Qtcp_i "

M_{gr} cr"Vwncpi " ? $\frac{0,033}{0,033} \times 1$ grup"? "3"Qtcp_i "

Vwncpi " " ? $\frac{0,33}{0,033} \times 1$ grup"? "32"Qtcp_i "

Rgo dcpw"Vwncpi " ? $\frac{0,66}{0,033} \times 1$ grup"? "42"Qtcp_i "

e0 M_{cr} cukcu'r tqf w_mk^{"S} v["] " "

Rtqf w_mk_{ku}'r gt"qtcp_i " ? $\frac{1 \text{ hari}}{0,66 \text{ hari}} \times 1 \text{ m}^2$ "

" " " " ? "3.737"o⁴"

F k_gpecpcncp"lwo n_j "i twr " ? "3"i twr "

M_{cr} cukcu'r tqf w_mk^{"S} v["] ? " "i twr "z'r tqf w_mk_{ku}"

" " " " ? "3z42+"i twr "z"3.737"o⁴"

" " " " ? "52.5"o⁴lj ctK"

f0 Y cmw"

Y cmw" ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? $\frac{44,61 \text{ m}^2}{30,3 \text{ m}^2/\text{hari}}$? "3.69"j ctKé "4"j ctK"

g0 Dk{c{"cpi "fkr g_nwncp"

F kcuwo uknep" dgnkukpi " f ki wpcnep" ugdep{cni' 4z"
r go cnekc0Ugj kpi i c'r cf c'r gpi i wpccp'ngf wc'nerkp{c"
f kco dcj "47' "p{c"

Dlc{c" " ? "xqno g'z'pkckJ URM"
" " " ? "66.83"o 4"z"Tr 05676: 7./"
" " " ? "Tr 03762: 0/44.: 7"
F ki wpcnep"4"nerk" ? "Dlc{c'z'97' "
" " " ? "Tr 03762: 0/44.: 7"z'97' "
" " " ? "Tr 0330786; 4.36"

60804 Rngtllcp"Rgo dgukcp"

Rngtllcp"r gngtllcp"r go dgukcp"vpi i c"C"
f lngtlnep"f gpi cp"dcj cp"dgu'wkt"f cp"r qru'ugtvc"
o gpi i wpcnep" vpci c" o cpwuk" wpwmi
r go cucpi cpp{c0'F ko cpc"f cmo "ucw"i twr "vgtf ktk"
f ctkO cpf qt.'hgr cnc'wnepi .wnepi .f cp'r go dcpw"
wnepi 0' Dgtknw" cperkuc" J URM" 4237" Rngtllcp"
r go dgukcp"vpi i c"C"Vcdgn66: 'P kckJ URM4237"
Uwcdc{c" /" Rngtllcp" r go dgukcp" f gpi cp" Dgu'
Dgvqp"*r qru'wkt+"<"

24.03.01.14	Pekerjaan Pembesian dengan Besi Beton (ulir/polos)	kg	SNI 7394 :2008 (6.17)		
Upah :					
23.02.04.01.01.F	Mandor	0,0004	O.H	120.000	48
23.02.04.01.02.F	Kepala Tukang besi	0,0007	O.H	110.000	77
23.02.04.01.03.F	Tukang Besi	0,007	O.H	105.000	735
23.02.04.01.04.F	Pembantu Tukang	0,007	O.H	99.000	693
Jumlah:				1.553	
Bahan:					
20.01.01.09.01.01.F	Besi Beton (polos) d 10 mm	1,05	Kg	12.000	12.600

20.01.01.35.02.01	Kawat Beton	0,015	kg	23.000	345
.F					

Jumlah: 12.945

Nilai HSPK : 14.498

c0 Xqno g'r gngtlccp" " ? "3059.59"mi "

d0 Lwo nej "ngdwwj cp'lw0 dgt'f{c"

O cpf qt" " ? $\frac{0,0004}{0,0004} \times 1 \text{ grup}$ " ? "3"Qtcp " "

Mgr cr "Vwncpi " ? $\frac{0,0007}{0,0004} \times 1 \text{ grup}$ " ? "4"Qtcp " "

Vwncpi " " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$ " ? "3: "Qtcp " "

Rgo dcpw "Vwncpi " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$ " ? "3: "Qtcp " "

e0 Mcr cukcu'r tqf wmk "S v" " "

Rtqf wmkcu'r gt "qtcp " ? $\frac{1 \text{ hari}}{0,007 \text{ hari}} \times 1 \text{ kg}$ "

" " " " ? "364.: 79"mi "

F kgpepcncp "lwo nej "i twr " ? "3"i twr " "

Mcr cukcu'r tqf wmk "S v" ? " "i twr "z'r tqf wmkcu'r "

" " " " ? "3z3: +i twr "z"364.: 8mi "

" " " " ? "4093.65"mi lj ctk "

f0 Y cmw'

Y cmw' ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "

" " ? $\frac{1.337,37 \text{ kg}}{2.571,43 \text{ kg/hari}}$ " ? "2.74"j ctk "3"j ctk "

g0 Dlc{c}{cpi "fkr gtrncp"

Dlc{c} ? "xqno g'z "pkckJ URM"

" " ? "3059.59"z "Tr 0360; : ./"

" " ? "Tr 03; 05; ; 08; 8.9: "

60805 Rngtllccp'Rgpi geqtcP"

Rngtllccp'r gngtllccp'r gpi geqtcP"vpi i c"
C" f'kngtllccp" o gpi i wpcncP" vpci c" o cpwuk"
dgtf'cuctncP"J URM'42370Dgtknw'cpcrkuc"J URM'
4237'Rngtllccp'r gpi geqtcP"vpi i c'C"*Vcdgri608; "
P kckJ URM'4237'Uwtcdc{c/'Rngtllccp'Dgvqp'M/
522+<"

"

"

"

24.03.01.10	Pekerjaan Beton K-300	m3	SNI 7394 :2008 (6.7)		
Bahan :					
20.01.01.02.01.F	Semen PC 40 Kg	10,33	Zak	63.000	650.475
20.01.01.04.04.F	Pasir Cor/Beton	0,425	m³	232.100	98.787
20.01.01.05.04.01.F	Batu Pecah Mesin ½ cm	0,537	m³	466.000	250.413
23.02.02.02.01.F	Air Kerja	215	Liter	27	5.805
Jumlah:				1.005.481	
Upah :					
23.02.04.01.01.F	Mandor	0,083	O.H	120.000	9.960
23.02.04.01.02.F	Kepala Tukang batu	0,028	O.H	110.000	3.080
23.02.04.01.03.F	Tukang Batu	0,275	O.H	105.000	28.875
23.02.04.01.04.F	Pembantu Tukang	1,65	O.H	99.000	163.350
Jumlah:				205.265	
Nilai HSPK :				1.210.746	

c0 Xqno g'r gngtllccp" " ? '8.45"o⁵"

d0 Lwo ncj "hgdwwj cp"lwo dgt'f'c{c"

Ocpfqt" " ? $\frac{0,083}{0,083} \times 1$ grup"? '3"Qtcp" "

- Y cmw'qr gtcukqpcn'v4+"
 - ? "_____ Volume _____" " ? " $\frac{6,23 \text{ m}^3}{60,48 \text{ m}^3 / \text{jam}} \times 60 \text{ ""}$
 - ? "8.3: 3'o gpk"
 - Y cmw'co dcj 'v5+"
 - Rgpti cpvkcp'twem' ? "32"o gpk"
 - Wk'uno r " " ? ""7"o gpk"
 - " " " ? "37"o gpk"
 - Y cmw'r cuec'r grmcpcp'v6+"
 - Rgo dgtukj cp'r qo r c" ? "32"o gpk"
 - Rgo dqpi nctcp'r k r c" ? "52"o gpk"
 - Rgtukr cp'hgo dcrk' ? "32"o gpk"
 - " " " ? "72"o gpk"
 - Vqcr'ly cmw'
 - ? ""v4- "v3- "v5- "v6+'z" twem'lo kz gt""
 - ? "9.: ""o gpk'- "v72"o gpk'- "37"o gpk'- ""72"o gpk"
 - +z "3"twem'
 - ? "343.3: 3'o gpk'I82"o gpk"
 - ? "4.24""lco "I: 'lco 'ngtlc"
 - ? "2.474"j ctk'c "3"j ctk'
- g0 Dkc{c'{cpi 'fkr gtnwep"
- Dkc{c'dgvqp""
 - Dkc{c"" ? "xqno g'z'pkckJ URM"
 - " " ? "8.45""o ⁵z'Tr 030432068./"
 - " " ? "Tr 0907640 6; .34"
 - Dkc{c'ugy c'crv'? "Tr 09022022./I52"o ⁵"
 - *Uwo dgt"<RV0Xctk"Wucj c'Dgvqp+"
 - Wpwnlr gt'o ⁵? "Tr 04550555./"
 - ? "Tr 04550555./""z'8.45"o ⁵"
 - ? "Tr 0306750888.89"
 - Vqcr'dkc{c"
 - ? ""Dkc{c"- 'Dkc{c'ugy c'crv'"

? "Tr 090764Q 6; .34- "Tr 0306750888.89"

? "Tr 0: Q ; 8037.9: "

60806 Rngntlccp"Rgo dqpi nctcp"Dgnkukpi "

Rngntlccp"r go dqpi nctcp"dgnkukpi "vpi i c"
C" f kngtlcncp" f gpi cp" o go dqpi nctcp" dgnkukpi 0'
F ko cpc" f cnc" ucw" i tw" vgtf k k' f ct k' O cpf qt."
ngr cnc" wncpi ." wncpi " f cp" r go dcpw" wncpi 0'
Cpcrkuc" r gtj kwpi cp" f wtukuc" r go dqpi nctcp"
dgnkukpi "o gpi i wpcncp" cpcrkuc" ectc" o qf gtp" f ct k'
dwnw" Uqgf tclcv 0' *3; ; 6-0' Cpcrkuc" *ectc" o qf gtp +
cpi i c t c p" d k c { c " r g r c m u c p c c p . " u g r g t v k' d g t k n w " <

Vcdgri6057'Leo 'hgtlc'hgnkukpi 'Vcr 'hwucp'32'b 4"

P q0'	Lgpkul'Egvncp" Mc{w'	Leo 'hgtlc'ugvcr 'hwcu'egvncp"32'b 4"			
		O gp{gvgn'	O go cucpi "	O go dwnc'f cp" O go dgtulj ncp"	Tgr ctcuk'
3"	Rqpf cukr cpi m cnlgo dcvcp"	5/9"	4/6"	4/6"	4/7"
4"	F kpf lpi "	7/; "	5/7"	4/7"	4/7"
5"	Ncpck"	5/: "	4/6"	4/6"	4/7"
6"	Cvr "	5/; "	4/7"	4/6"	4/7"
7"	Vlcp i "	6/: "	4/6"	4/6"	4/7"
8"	Mgr cnc"Vlcp i "	7/33"	5/9"	4/7"	4/7"
9"	Dcrqni'dcrqni'	8/32"	5/6"	4/7"	4/7"
: "	Vcp i c/ vpi i c"	8/34"	6/: "	5/7"	4/7"
; "	Uwf w'Vlcp i " f cp'dcrqni' dgtwnk"	7/33"	5/; "	5/7"	4/7"
32"	Co dcp i " lgpf grc'f cp" rkpgni'	7/32"	5/8"	5/7"	4/7"

c0 Xqno g'r gngtlccp" " ? "66.83"b 4"

d0 Lwo ncj 'hgdwwj cp'lwgo dgt'f c{c"

$$\text{O cpf qt} \quad " \quad ? \frac{0,033}{0,033} \times 1 \text{ grup} ? " 3 \text{ Qtcpi} "$$

$$\text{Mcr crc} \text{ "Vwncpi} " \quad ? \frac{0,033}{0,033} \times 1 \text{ grup} ? " 3 \text{ Qtcpi} "$$

$$\text{Vwncpi} " \quad " \quad ? \frac{0,33}{0,033} \times 1 \text{ grup} ? " 32 \text{ Qtcpi} "$$

$$\text{Rgo dcpw} \text{ "Vwncpi} " \quad ? \frac{0,66}{0,033} \times 1 \text{ grup} ? " 42 \text{ Qtcpi} "$$

e0 Mcr cukcu'r tqf wmk "S v" " "

Uguwck' f gpi cp" vcdgn' 6045." dej y c" lco "ngtlc" wpwnl'
o go dwnc" f cp" o go dgtukj ncp" egvncp" lgpku' vcp' "
cf crcj "ugrco c"5"6"7"lco " *f ki wpcncp"5"lco "1"32"o 4"
dgnkukpi +0"

f0 Y cmw'

$$\text{Y cmw} \text{ ""} ? \frac{\text{Volume}}{10 \text{ m}^2} \times 3 \text{ jam} \text{ ""}$$

$$" \quad \text{ ""} ? \frac{44,61 \text{ m}^2}{10 \text{ m}^2} \times 3 \text{ jam} ? " 35.5: " \text{ lco} \text{ "é} 4 \text{ j} \text{ ctk'}$$

g0 Rtqf wmkxkcu"

$$\text{Rtqf wmkxkcu} \quad ? \frac{\text{volume}}{\text{durasi}} = \frac{44,61 \text{ m}^2}{2 \text{ hari}} "$$

$$? 44.53 \text{ o } 4 \text{ I} \text{ j} \text{ ctk'}$$

60804 Rngntlccp"Vcpi i c"D"

608040 Rngntlccp"Dgnkukpi "

Rngntlccp" r rngntlccp" dgnkukpi " vcp' i c" D"
f kngtlcncp" f gpi cp" dej cp" o wmk r gmu' f cp"
o gpi i wpcncp" vpc' i c" o cpwuk 0F ko cpc' f crco "ucw"
i twr "vgtf k k' f ctk' O cpf qt. "ngr crc" wncpi . "wncpi ."
f cp' r go dcpw' wncpi 0Dgtknw' cpc' kuc "J URM 4237"
Rngntlccp" dgnkukpi " vcp' i c" D" *Vcdgn' 6049" P krc'
J URM 4237" Uwtcdc{c" /" Rngntlccp" Dgnkukpi "
Vcpi i c+ "<"

24.03.01.20	Pekerjaan Bekesting Tangga	m2	SNI 7394 :2008 (6.23		
	Upah :				
23.02.04.01.01.F	Mandor	0,033	O.H	120.000	3.960
23.02.04.01.02.F	Kepala Tukang Kayu	0,033	O.H	110.000	3.630
23.02.04.01.03.F	Tukang Kayu	0,33	O.H	105.000	34.650
23.02.04.01.04.F	Pembantu Tukang	0,66	O.H	99.000	65.340
					107.580
	Bahan:				
20.01.01.43.04.06.F	Kayu meranti bekesting	0,03	m3	3.200.000	96.000
20.01.01.28.04.04.F	Paku Triplek	0,4	Kg	22.000	8.800
20.01.02.01.06.F	Manyak bekesting	0,2	liter	28.300	5.660
20.01.01.43.03.04.F	kayu Kamper balok 4/5	0,015	m3	6.400.000	96.000
20.01.01.34.02.F	Plywood tebal 9 mm	0,35	lembar	93.600	32.760
					237.805
Nilai HSPK :					345.385

c0 Xq^{no} g'r g^{ng}tlccp" " ? "45.: 9"o⁴"

d0 Lxo mcj "ngdwwj cp"lwo dgt"f c{c"

O c^{pf}qt" " ? $\frac{0,033}{0,033} \times 1 \text{ grup} ? "3"Qtcpi "$

Mcr c^{rc}"Vwncpi " ? $\frac{0,033}{0,033} \times 1 \text{ grup} ? "3"Qtcpi "$

Vwncpi " " ? $\frac{0,33}{0,033} \times 1 \text{ grup} ? "32"Qtcpi "$

Rgo dcpw"Vwncpi " ? $\frac{0,66}{0,033} \times 1 \text{ grup} ? "42"Qtcpi "$

e0 Mcr cukcu"r tqf w^{nuk}"*S v^l" " "

Rtqf wmkhkcuc'r gt"qtcp i " ? " $\frac{1 \text{ hari}}{0,66 \text{ hari}} \times 1 \text{ m}^2$ ""
 " " " " ? "3.737"o 4"
 F ktgpecpcncp"lwo ncj "i twr " ? "3'i twr "
 Mcr culkcuc'r tqf wmk"S vt" ? " 'i twr 'z'r tqf wmkhkcuc"
 " " " " ? "3z42+i twr 'z'3.737"o 4"
 " " " " ? "52.5"o 4 lj ctk"

f0 Y cmw'

Y cmw' ? " $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ ""
 " " ? " $\frac{23,87 \text{ m}^2}{30,3 \text{ m}^2/\text{hari}}$ "? "2.9: 9"j ctkÉ "3"j ctk'

g0 Dlc{c"{cpi "fkr gtnwncp"

F kcuwo ukncp" dgnkukpi " fki wpcncp" ugdcpc{cmi 4z"
 r go cncncp0Ugi kpi i c'r cf c'r gpi i wpccp'hgf wc'hncp{c"
 f kco dcj "47" "p{c"

Dlc{c" " ? "xqno g'z"pkckJ URM"
 " " " ? "45.: 9"o 4"z"Tr 056705: 7./"
 " " " ? "Tr 0: 04650 43.: 9"
 F ki wpcncp"4'hnck' ? "Dlc{c'z'97" "
 " " " ? "Tr 0: 04650 43.: 9'z'97" "
 " " " ? "Tr 0808: 40 88.62"

608040 Rngntlccp"Rgo dgukcp"

Rngntlccp" r gngtlccp" r go dgukcp" vpi i c" D"
 f kngtlcncp"f gpi cp"dcj cp"dgu'wkt"f cp"r qmqu'ugtvc"
 o gpi i wpcncp" vpci c" o cpwuk" wpcwn"
 r go cucpi cpp{c0F ko cpc"f crco "ucw"i twr "vgtf ktk"
 f ctkO cpf qt.'hgr crc'wncpi .'wncpi .'fcp'r go dcpw'
 wncpi 0' Dgtknw" cpcnkuc" J URM" 4237" Rngntlccp"
 r go dgukcp'vpi i c"D"*Vcdgn608: 'P kckJ URM"4237"
 Uwtcdc{c" /" Rngntlccp" r go dgukcp" f gpi cp" Dguk"
 Dgqp"*r qmqu'wkt+"<"

24.03.01.14	Pekerjaan Pembesian dengan Besi Beton (ulir/polos)	kg	SNI 7394 :2008 (6.17)		
<u>Upah :</u>					
23.02.04.01.01.F	Mandor	0,0004	O.H	120.000	48
23.02.04.01.02.F	Kepala Tukang besi	0,0007	O.H	110.000	77
23.02.04.01.03.F	Tukang Besi	0,007	O.H	105.000	735
23.02.04.01.04.F	Pembantu Tukang	0,007	O.H	99.000	693
Jumlah:					1.553
<u>Bahan:</u>					
20.01.01.09.01.01.F	Besi Beton (polos) d 10 mm	1,05	Kg	12.000	12.600
20.01.01.35.02.01.F	Kawat Beton	0,015	kg	23.000	345
Jumlah:					12.945
Nilai HSPK :					14.498

c0 Xqwo g'r gngtlccp" " ?"94: .37"mi "

d0 Lwo ncj "hgdwwj cp'lwo dgt'f c{c"

O cpf qt" " ? " $\frac{0,0004}{0,0004} \times 1$ grup"? "3"Qtcp i "

Mgr crc"Vwncpi " ? " $\frac{0,0007}{0,0004} \times 1$ grup"? "4"Qtcp i "

Vwncpi " " ? " $\frac{0,007}{0,0004} \times 1$ grup"? "3: "Qtcp i "

Rgo dcpw"Vwncpi " ? " $\frac{0,007}{0,0004} \times 1$ grup"? "3: "Qtcp i "

e0 Mcr cukcu'r tqf wmk"*S v+" "

Rtqf wmkkcu'r gt"qtcp i " ? " $\frac{1 \text{ hari}}{0,007 \text{ hari}} \times 1$ kg"

" " " " ? "364.: 79"mi "

F kgpcpcncp"lwo ncj "i twr " ? "3"i twr "

Mcr cukcu'r tqf wmk"*S v+" ? " "i twr "z"r tqf wmkkcu"

" " " " ?*3z3: +i twr 'z"364.: 8mi "

" " " " ?""40793.65"mi lj ctk"

f0 Y cmw'

Y cmw' ? " $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ ""

" " ? " $\frac{728,15 \text{ kg}}{2.571,43 \text{ kg/hari}}$ "? "2.4: 5"j ctkÉ'3"j ctk"

g0 Dlc{c" {cpi 'fkr gtrwncp"

Dlc{c" ? "xqmo g'z"pkckJ URM"

" " ? "94: .37"z"Tr 03606; : ./"

" " ? "Tr 0320778024.97"

60806 Rngntlccp'Rgpi geqtcP"

Rngntlccp'r gngtlccp'r gpi geqtcP'vcpi i c"D"

f kngtlcncp" o gpi i wpcncp" vgpci c" o cpwuk"

dgtf cuctncp"J URM'42370'Dgtknw'cpcrkuc"J URM'

4237"Rngntlccp'r gpi geqtcP'vcpi i c"D"*Vcdgn'608; "

P kckJ URM'4237"Uwcdc {c"/"Rngntlccp"Dgwqp"/M/

522+<"

24.03.01.10	Pekerjaan Beton K-300	m3	SNI 7394 :2008 (6.7)		
Bahan :					
20.01.01.02.01.F	Semen PC 40 Kg	10,33	Zak	63.000	650.475
20.01.01.04.04.F	Pasir Cor/Beton	0,425	m³	232.100	98.787
20.01.01.05.04.01 .F	Batu Pecah Mesin ½ cm	0,537	m³	466.000	250.413
23.02.02.02.01.F	Air Kerja	215	Liter	27	5.805
				Jumlah:	1.005.481
Upah :					
23.02.04.01.01.F	Mandor	0,083	O.H	120.000	9.960
23.02.04.01.02.F	Kepala Tukang batu	0,028	O.H	110.000	3.080
23.02.04.01.03.F	Tukang Batu	0,275	O.H	105.000	28.875
23.02.04.01.04.F	Pembantu Tukang	1,65	O.H	99.000	163.350

Mwcrdknuk'	K gpkcu'	P kck'
	d0Ugtwknuk'UO RIURR'*Kf'cp'cvcw' e0Rgpi cno cp"@8222'lco "	
Ewnw "	c0Rgpf kf knep'UVO lugf gtclcv' d0Ugtwknuk'UO RIURR'*Kf'cp'cvcw' e0Rgpi cno cp'6222'o'8222'lco "	2.92"
Ugf cpi "	c0Rgpf kf knep'UVO lugf gtclcv' d0Ugtwknuk'UO RIURR'*Kf'cp'cvcw' e0Rgpi cno cp'4222'o'6222'lco "	2.87"
Mwtcpi "	c0Rgpf kf knep'UVO lugf gtclcv' d0Ugtwknuk'f'cp'cvcw' e0Rgpi cno cp'>5222'lco "	2.72"

*uwo dgt " < Dmw' Tglgt gpiuk' wpmw' Mqpyt cmqt "

Dcpi wpcp'I gf wpi 'f cp'Uk-k042250J cn764+

- Fkuwo uknep'nqpf kuk'ewcec'Vgtcpi ."Ugi ct"*2.; 2+"
*Vcdgn'6044'Mqpf kuk'Ewcec-0'

Mqpf kuk'Ewcec"	Hemqt"	
	O gpkvllco "	' "
Vgtcpi ."Ugi ct"	77 182"	2.; 2"
Vgtcpi ."Rcpu.'Dgtf gdw'	72 182"	2.; 5"
O gpf wpi "	67 182"	2.97"
I gnr "	62 182"	2.88"

*uwo dgt " < Dmw' Tglgt gpiuk' wpmw' Mqpyt cmqt "

Dcpi wpcp'I gf wpi 'f cp'Uk-k042250J cn764+

- Qwr w'r knqp'ukf g'f ctk'eqpet gvg'r w r "
? "334"o⁵ lco "uwo dgt "<dtquw"eqpet gvg'r w r +"
? "334"o⁵ lco "z"2.97"z"2.: "z"2.; "? "82.6: "o⁵ lco "
- Lwo rcj " twm' o kzgt " *ner cukcu" 9" o⁵+ {cpi "
f kdwj ncp"<
- twm'o kzgt " ? " $\frac{\text{Volume}}{\text{kapasitas mixer}}$? $\frac{3,34 \text{ m}^3}{7 \text{ m}^3}$ "
" ? "2.69"é"3"twm'
- Rtqf wmkcu'r gt'j ctk'
? " $\frac{\text{Volume}}{\text{banyak hari}}$? $\frac{3,34 \text{ m}^3}{1 \text{ hari}}$? "5.56"o⁵ lj ctk'

- Dcp{cni'tweni'o kzgt'r gt'j ctk'

$$? \frac{\text{"Produktifitas"} \cdot \frac{3,34 \text{ m}^3/\text{hari}}{7 \text{ m}^3}}{\text{kapasitas mixer}}$$

$$? \cdot 2.69 \text{ "é "3"tweni'j ctk'}$$

f0 Y cmw'

- Y cmw'r gtukr cp "3+"
 Rgpi cwtcp'r quuk" ? "32"o gpk"
 Rgo cucpi cp'r kr c" ? "52"o gpk"
Krg'tweni'o kzgt" ? "32"o gpk"
 " " " ? "72"o gpk"
- Y cmw'qr gtcukqpcn"4+"

$$? \frac{\text{Volume}}{\text{output concrete pump}} \cdot \frac{6,23 \text{ m}^3}{60,48 \text{ m}^3/\text{jam}} \times 60 \text{ "}$$

$$? \cdot 5.535 \text{ "o gpk'}$$
- Y cmw'co dcj "5+"
 Rgpti cp'kcp'tweni' ? "32"o gpk"
Wk'uno r " " ? "7"o gpk"
 " " " ? "37"o gpk"
- Y cmw'r cucc'r grmcpcpp"6+"
 Rgo dgtukj cp'r qo r c" ? "32"o gpk"
 Rgo dqpi nctcp'r kr c" ? "52"o gpk"
Rgtukr cp'ngo dcrk' ? "32"o gpk"
 " " " ? "72"o gpk"
- Vqverly cmw'

$$? \cdot \frac{1}{4} - \frac{1}{3} - \frac{1}{5} - \frac{1}{6} + \frac{1}{2} \text{ "tweni'o kzgt"}$$

$$? \cdot 5.535 \text{ "o gpk' - "72"o gpk' - "37"o gpk' - "72"o gpk'}$$

$$? \cdot 33 : 535 \text{ o gpk' } 182 \text{ "o gpk'}$$

$$? \cdot 3 : ; 94 \text{ "lco "I: "lco "ngtlc"}$$

$$? \cdot 2.468 \text{ "j ctk'é "3"j ctk'}$$

g0 Dkc{c"{cpi "f kr gtrnwcp"

- Dkc{c"dgvp"
 Dkc{c" ? "xqrwo g'z"pkck'J URM"

- " " ?"5.56""o⁵"z"Tr00432068./"
- " " ?"Tr060650 ; 4.68"
- Dlc{c'ugy c'crv"? "Tr09022022./I52"o⁵"
- *Uwo dgt"<RV0Xctlc"Wucj c"Dgvqp+"
- Wpwnlr gt"o⁵"? "Tr04550555./"
- ? "Tr04550555./""z"5.56"o⁵"
- ? "Tr099; 055.55"
- "
- Vqcn'dlc{c"
- ? "Dlc{c"- "Dlc{c'ugy c'crv"
- ? "Tr060650 ; 4.68"- "Tr099; 055.55"
- ? "Tr06045047.: 2"

60806 Rngtllcp"Rgo dqpi nctcp"Dgnkupi "

Rngtllcp"r go dqpi nctcp"dgnkupi "cpi i c"

D" fngtllcp" f gpi cp" o go dqpi nct" dgnkupi O'

Fko cpc" f crco " ucw" i twr " vgtfkk' f ctk' Ocpfqt."

ngr crc" wncpi ." wncpi " f cp" r go dcpw" wncpi O"

Cpcrkuc" r gtj kwpi cp" f wtckuc" r go dqpi nctcp"

dgnkupi "o gpi i wpcncp"cpckuc"ectc"o qf gtp"f ctk'

dwnw" Uqgf tclcw' *3; ; 6-0' Cpcrkuc" *ectc"o qf gtp+"

cpi i ctcpl'dlc{c'r grncpcpcp."ugr gt v'dgtkmw'<

Vcdgn6058'Lco 'ngtllc'dgnkupi 'lcr'hucup'32'b 4"

P q0'	Igpku'Egvcncp" Mc{w'	Lco 'ngtllc'ugvcr'hucv'egvcncp'32'o 4"			
		O gp{ gvgn'	O go cucpi "	O go dwnc'f cp" O go dgtukj nep"	Tgr ctcuk'
3"	Rqpf cuklr cpi m cnllgo dcvp"	5/9"	4/6"	4/6"	4/7"
4"	F kpf lpi "	7/; "	5/7"	4/7"	4/7"
5"	Ncpvck'	5/; "	4/6"	4/6"	4/7"
6"	Cvr "	5/; "	4/7"	4/6"	4/7"
7"	Vlcpj "	6/; "	4/6"	4/6"	4/7"
8"	Mgr crc'Vlcpj "	7/33"	5/9"	4/7"	4/7"
9"	Dcnm'dcnm'	8/32"	5/6"	4/7"	4/7"

P q0	Lgplu'Egvnep" Mc{w'	Lco 'ngtlc'ugvkr 'hwcu'egvnep"32"o 4"			
		O gp{gvgn'	O go cucpi "	O go dwne"fcp" O go dgtulj nep"	Tgr etcuk'
:	Vcpi i c/ vcpi i c"	8/34"	6/; "	5/7"	4/7"
;	Uwf w'vcpi " f cp'dcrgni' dgtwnk"	7/33"	5/; "	5/7"	4/7"
32"	Co dcpi " lgpf gr"fcp" dpvgn'	7/32"	5/8"	5/7"	4/7"

c0 Xqrwo g'r gngtlccp" " ?"45.: 9"o 4"

d0 Lxo rcj 'ngdwwj cp"uwo dgt"f c{c"

O cpf qt" " ? $\frac{0,033}{0,033} \times 1 \text{ grup}?$ "3"Qtcpi "

Mgr crc"Vwnepi " ? $\frac{0,033}{0,033} \times 1 \text{ grup}?$ "3"Qtcpi "

Vwnepi " " ? $\frac{0,33}{0,033} \times 1 \text{ grup}?$ "32"Qtcpi "

Rgo dcpw"Vwnepi " ? $\frac{0,66}{0,033} \times 1 \text{ grup}?$ "42"Qtcpi "

e0 Mkr cukcu'r tqf wmk" *S vt" " "

Uguwck' f gpi cp" vdgni' 6045. " dcj y c" lco " ngtlc" wpwni'
o go dwne" fcp" o go dgtulj nep" egvnep" lgplu' vcpi "
cf crcj "ugrco c"5"6"7"lco " *fki vpcnep"5"lco "l"32"o 4"
dgnkukpi +0"

f0 Y cmw"

Y cmw" ? $\frac{\text{Volume}}{10 \text{ m}^2} \times 3 \text{ jam}''$

" ? $\frac{23,87 \text{ m}^2}{10 \text{ m}^2} \times 3 \text{ jam}?$ "9.38"lco "é"3"j ctk'

g0 Rtqf wmkxkcu"

Rtqf wmkxkcu" ? $\frac{volume}{durasi} = \frac{23,87 \text{ m}^2}{1 \text{ hari}}$ "

? "45.: 9"o 4I"j ctk"

60805 Rngntlccp"Vcpi i c"E"

60808 Rngntlccp"Dgnkukpi "

Rngntlccp"r gngtlccp"dgnkukpi "vcpi i c"E"
f kngtlcncp" f gpi cp" dcj cp" o wnkrgmu" f cp"
o gpi i wpcncp" vpci c"o cpwuk0' F ko cpc" f crco "
ucw" i twr " vgtf ktk' f ctk' O cpf qt." ngr crc" wncpi ."
wncpi ." f cp" r go dcpw' wncpi 0' Dgtknw" cpcrkuc"
J URM'4237'Rngntlccp"dgnkukpi "vcpi i c'E"*Vcdgri'
4046" P kck' J URM' 4237" Uwtcdc{c'/" Rngntlccp"
Dgnkukpi "Vcpi i c<"

24.03.01.20	Pekerjaan Bekesting Tangga		m2	SNI 7394 :2008 (6.23	
Upah :					
23.02.04.01.01.F	Mandor	0,033	O.H	120.000	3.960
23.02.04.01.02.F	Kepala Tukang Kayu	0,033	O.H	110.000	3.630
23.02.04.01.03.F	Tukang Kayu	0,33	O.H	105.000	34.650
23.02.04.01.04.F	Pembantu Tukang	0,66	O.H	99.000	65.340
					107.580
Bahan:					
20.01.01.43.04.06 .F	Kayu meranti bekesting	0,04	m3	3.200.000	128.000
20.01.01.28.04.04 .F	Paku Triplek	0,4	Kg	22.000	8.800
20.01.02.01.06.F	Manyak bekesting	0,2	liter	28.300	5.660
20.01.01.43.03.04 .F	kayu Kamper balok 4/5	0,015	m3	6.400.000	96.000
20.01.01.34.02.F	Plywood tebal 9 mm	0,35	lembar	93.600	32.760

		237.805
		Nilai HSPK : 345.385
c0	Xq _n wo g'r gngtlccp" "	? "44.: 8"o ⁴ "
d0	Lwo n _j 'hgdwwj cp'lwo dgt'f c{c"	
	O cpf qt" "	? " $\frac{0,033}{0,033}$ × 1 grup"? "3"Qtcp _i "
	M _{gr} cr _c "Vwnc _{pi} "	? " $\frac{0,033}{0,033}$ × 1 grup"? "3"Qtcp _i "
	Vwnc _{pi} " "	? " $\frac{0,33}{0,033}$ × 1 grup"? "32"Qtcp _i "
	Rgo dcpw"Vwnc _{pi} "	? " $\frac{0,66}{0,033}$ × 1 grup"? "42"Qtcp _i "
e0	M _{cr} cukcu'r tqf wnk'*S v ⁺ " "	
	Rtqf wnk _k ku'r gt"qtcp _i "	? " $\frac{1 \text{ hari}}{0,66 \text{ hari}}$ × 1 m ² "
	" " " "	? "3.737"o ⁴ "
	F k _g pecpcncp"lwo n _j 'i twr " ? "3'i twr "	
	M _{cr} cukcu'r tqf wnk'*S v ⁺ " "	? " 'i twr 'z'r tqf wnk _k ku'r "
	" " " "	? "3z42+'i twr 'z'3.737"o ⁴ "
	" " " "	? "52.5"o ⁴ j _j ctk"
f0	Y cmw'	
	Y cmw'	? " $\frac{\text{Volume}}{\text{Kapabilitas produksi}}$ "
	" "	? " $\frac{22,86 \text{ m}^2}{30,3 \text{ m}^2/\text{hari}}$ "? "2.976"j ctk'ē "3"j ctk"
g0	Dlc{c""{cpi "f k _g gtnwncp"	
	F kcuwo ukncp" d _{gn} ku _k pi " f k _i wpncp" ugdec{cni' 4z"	
	r go cnc _k cp0Ug _j k _{pi} i c'r cf c'r gpi i wpccp'ngf wc'nc _k cp{c"	
	f kco dcj "47' "p{c"	
	Dlc{c" "	? "xq _n wo g'z'pkck'J URM"
	" " "	? "44.: 8"o ⁴ "z"Tr 05676: 7./"
	" " "	? "Tr 090 ; 663; .: : "

F ki wpcnēp"4'hērk" ?"Dlc{c'z'97' "

" " " ?"Tr 090 ; 6053; .: : 'z'97' "

" " " ?"Tr 07Q 4205; .: ; 3"

60804 Rngntlccp"Rgo dgukcp"

Rngntlccp"r gngtlccp"r go dgukcp"vcpi i c"E"

f kngtlcnēp"f gpi cp"dcj cp"dgu'wkt"f cp"r qmqu'ugtvc"

o gpi i wpcnēp" vpci c" o cpwuk" wpmwl'

r go cucpi cpp{c0'F ko cpc"f cnc "ucw"i twr "vgtf ktk'

f ctkO cpf qt.'hgr cr:'wncpi .'wncpi .'fcp't go dcpw'

wncpi 0' Dgtknw" cpcnkuc" J URM' 4237" Rngntlccp"

r go dgukcp"vcpi i c'E"*Vcdgnl60: 'P kck'J URM'4237"

Uwtcdc{c" /" Rngntlccp" r go dgukcp" f gpi cp" Dguk'

Dgvqp"*r qmqu'wkt+"<"

24.03.01.14	Pekerjaan Pembesian dengan Besi Beton (ulir/polos)		kg	SNI 7394 :2008 (6.17)	
<u>Upah :</u>					
23.02.04.01.01.F	Mandor	0,0004	O.H	120.000	48
23.02.04.01.02.F	Kepala Tukang besi	0,0007	O.H	110.000	77
23.02.04.01.03.F	Tukang Besi	0,007	O.H	105.000	735
23.02.04.01.04.F	Pembantu Tukang	0,007	O.H	99.000	693
				Jumlah:	1.553
<u>Bahan:</u>					
20.01.01.09.01.01.F	Besi Beton (polos) d 10 mm	1,05	Kg	12.000	12.600
20.01.01.35.02.01.F	Kawat Beton	0,015	kg	23.000	345
				Jumlah:	12.945
				Nilai HSPK :	14.498

c0 Xqno g'r gngtlccp" " ?'925.65"ni "

d0 Lwo ncj "ngdwwj cp'uwo dgt"f c{c"

- O c p f q t " " ? $\frac{0,0004}{0,0004} \times 1 \text{ grup}$? "3" Q t c p i " "
- M g r c r c " V w n e p i " ? $\frac{0,0007}{0,0004} \times 1 \text{ grup}$? "4" Q t c p i " "
- V w n e p i " " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$? "3: " Q t c p i " "
- R g o d c p w " V w n e p i " ? $\frac{0,007}{0,0004} \times 1 \text{ grup}$? "3: " Q t c p i " "
- e0 M e r c u k c u " r t q f w m k " * S v + " " "
- R t q f w m k k c u " r g t " q t c p i " ? $\frac{1 \text{ hari}}{0,007 \text{ hari}} \times 1 \text{ kg}$
- " " " " ? "364.: 79" n i " "
- F k g p e c p e n e p " l w o n j " i t w r " ? "3" i t w r " "
- M e r c u k c u " r t q f w m k " * S v + " ? " " i t w r " z " r t q f w m k k c u " "
- " " " " ? "3z3: -i t w r " z "364.: 8n i " "
- " " " " ? "40793.65" n i l j c t k " "
- f0 Y c m w " "
- Y c m w " ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "
- " " ? $\frac{703,43 \text{ kg}}{2.571,43 \text{ kg/hari}}$? "2.496" j c t k é "3" j c t k " "
- g0 D k c { c " { c p i " f k r g t n w n e p " "
- D k c { c " ? " x q n w o g " z " p k r c k J U R M " "
- " " ? "925.65z " T r 03606; : ./ " "
- " " ? " T r 03208; : 054; .66 " "
- 60805 R g n g t l c c p " R g p i g e q t c p " "
- R g n g t l c c p " r g n g t l c c p " r g p i g e q t c p " v c p i i c " "
- E " f k n g t l c n e p " o g p i i w p c n e p " v g p c i c " o c p w u k " "
- d g t f c u c t n e p " J U R M " 42370 D g t k n w " c p e r k u c " J U R M " "
- 4237 " R g n g t l c c p " r g p i g e q t c p " v c p i i c " E " * V c d g n i 608; " "
- P k r c k J U R M " 4237 " U w t c d c { c " / " R g n g t l c c p " D g v q p " M " "
- 522+ " < " "

24.03.01.10	Pekerjaan Beton K-300	m3	SNI 7394 :2008 (6.7)		
Bahan :					
20.01.01.02.01.F	Semen PC 40 Kg	10,33	Zak	63.000	650.475
20.01.01.04.04.F	Pasir Cor/Beton	0,425	m³	232.100	98.787
20.01.01.05.04.01.F	Batu Pecah Mesin ½ cm	0,537	m³	466.000	250.413
23.02.02.02.01.F	Air Kerja	215	Liter	27	5.805
				Jumlah:	1.005.481
Upah :					
23.02.04.01.01.F	Mandor	0,083	O.H	120.000	9.960
23.02.04.01.02.F	Kepala Tukang batu	0,028	O.H	110.000	3.080
23.02.04.01.03.F	Tukang Batu	0,275	O.H	105.000	28.875
23.02.04.01.04.F	Pembantu Tukang	1,65	O.H	99.000	163.350
				Jumlah:	205.265
				Nilai HSPK :	1.210.746

c0 Xqno g'r gngtlccp" " ? "5.25"o 5"

d0 Lwo rcj "ngdwwj cp'owo dgt"fc{c"

O cpf qt" " ? $\frac{0,083}{0,083} \times 1 \text{ grup}$? "3"Qtcp" "

Mgr cr"Vwncpi " ? $\frac{0,028}{0,083} \times 1 \text{ grup}$? "3"Qtcp" "

Vwncpi " " ? $\frac{0,275}{0,083} \times 1 \text{ grup}$? "6"Qtcp" "

Rgo dcpw"Vwncpi " ? $\frac{1,65}{0,083} \times 1 \text{ grup}$? "43"Qtcp" "

e0 Rtqf wmkxkcuc" "

- Fkcuwo ukncp" nupf kuk" qr gtcuk" crcv" f cp"
r go grkj ctccp"o gup"fcro "nupf kuk" dcm" *2.97+ "
*Vcdgn" 6042" Gkukpuk" Qr gtcukpcn' Crcv" f cp"
Rgo grkj ctccp-0

Mqpf kuk' Qr gtcuk'Crev'	Rgo grkj ctecp'Crev'				
	Dckni' Ugnerk'	Dckni'	Ugf cpi "	Dwtwni'	Dwtwni' Ugnerk'
Dckni'Ugnerk'	2.: 5"	2.: 3"	2.98"	2.92"	2.85"
Dckni'	2.9: "	2.97"	2.93"	2.87"	2.82"
Ugf cpi "	2.94"	2.8; "	2.87"	2.82"	2.76"
Dwtwni'	2.85"	2.83"	2.79"	2.74"	2.67"
Dwtwni'Ugnerk'	2.74"	2.72"	2.69"	2.64"	2.54"

*imo dgt " < 'Dwmw' Tglgt gpuk' wpwni' Mqpv cmqt "

Dcpi wpcp'I gf wpi 'f cp'Uk-k042250J cni763+

- F kcuwo uknep" Mgo co r wcp" qr gtcvqt "
f knevgi qtknep" vgtco r kni' *2.: 2+ " *Vcdgn' 6043 "
Mxcrkhkneuk'Mvgvtco r knep"Qr gtcvqt +0'

Mxcrkhkneuk'	K gpvksu'	P knck'
Vgtco r kni'	c0Rgpf kf knep'UVO lufg gteclv' d0Ugtvkhkneuk'UO RIUKRR'Kkf cp'cvcw' e0Rgpi crco cp"@8222'lco "	2.: 2"
Ewnwr "	c0Rgpf kf knep'UVO lufg gteclv' d0Ugtvkhkneuk'UO RIUKRR'Kkf cp'cvcw' e0Rgpi crco cp'6222'6'8222'lco "	2.92"
Ugf cpi "	c0Rgpf kf knep'UVO lufg gteclv' d0Ugtvkhkneuk'UO RIUKRR'Kkf cp'cvcw' e0Rgpi crco cp'4222'6'6222'lco "	2.87"
Mwtcpi "	c0Rgpf kf knep'UVO lufg gteclv' d0Ugtvkhkneuk'f cp'cvcw' e0Rgpi crco cp">'5222'lco "	2.72"

*imo dgt " < 'Dwmw' Tglgt gpuk' wpwni' Mqpv cmqt "

Dcpi wpcp'I gf wpi 'f cp'Uk-k042250J cni764+

- F kcuwo uknep"mqpf kuk'ewcec"Vgtcpi ."Ugi ct"*2.; 2+ "
*Vcdgn'6044'Mqpf kuk'Ewcec+0'

Mqpf kuk'Ewcec"	Hcmqt"	
	O gpkvllco "	' "
Vgtcpi ."Ugi ct"	77 82"	2.; 2"
Vgtcpi ."Repcu.'Dgtf gdw'	72 82"	2.: 5"
O gpf wpi "	67 82"	2.97"

Mqpf kuk'Ewcec"	Hemqt"	
	O gpkllco "	' "
I gner "	62 l82"	2.88"

**uwo dgt " < " Dmw" T glgt gpiuk" wpmw' Mqpytcmqt "*

Dcpi wpcp'I gf wpi 'f cp'Ukr k042250J cn764+ "

- Qwr w'r kmp'ukf g'f ctk'eqpetgvg'r wo r "
- ? "334"o ⁵llco " **uwo dgt " < " dtquw' "eqpetgvg'r wo r + "*
- ? "334"o ⁵llco "z"2.97"z"2.: "z"2.; "? "82.6: "o ⁵llco "
- Lwo rcj " twn' o kzgt " **ner cukcu" 9" o ⁵+ " { cpi " f kdwvj nep" < "*
- tven'lo kzgt " ? " $\frac{\text{Volume}}{\text{kapasitas mixer}}$ " ? " $\frac{3,03 \text{ m}^3}{7 \text{ m}^3}$ "
- "" ? ""2.655"é "3"tven'
- Rtqf wmkhkc'u'r gt 'j ctk'
- ? " $\frac{\text{Volume}}{\text{banyak hari}}$ " ? " $\frac{3,03 \text{ m}^3}{1 \text{ hari}}$ " ? "5.25"o ⁵lj ctk'
- Dcp{ cn'tven'lo kzgt 'r gt 'j ctk'
- ? " $\frac{\text{Produktifitas}}{\text{kapsitas mixer}}$ " ? " $\frac{3,03 \text{ m}^3/\text{hari}}{7 \text{ m}^3}$ "
- ? "2.655"é "3"tven'lj ctk'

f0 Y cmw'

- Y cmw'r gtuker cp' "3+ "
- Rgpi cwtcp'r qukuk" ? "32"o gpkv'
- Rgo cucpi cp'r kr c" ? "52"o gpkv'
- Krg'tven'lo kzgt " ? "32"o gpkv'"
- " " " ? "72"o gpkv'
- Y cmw'qr gtuker cp' "4+ "
- ? " $\frac{\text{Volume}}{\text{output concrete pump}}$ " ? " $\frac{3,03 \text{ m}^3}{60,48 \text{ m}^3/\text{jam}}$ × 60 "
- ? "5.228"o gpkv'
- Y cmw'co dcj "5+ "
- Rgpti cp'kcp'tven' ? "32"o gpkv'
- Wk'umo r " " ? ""7"o gpkv'"

- " " " ?'37'o gpk'
- Y cmw'r cuez'r grncucpccp'*6+"
 Rgo dgtulj cp'r qo r c" ?'32'o gpk'
 Rgo dqpi nctcp'r kr c" ?'52'o gpk'
Rgtukcr cp'ngo dcrk' ?'32'o gpk'
 " " " ?'72'o gpk'
 - Vqven'y cmw'
 ?'4"- '*3"- '5- '6+'z" vtenl'o kz gt"
 ?'5.228""o gpk'- '*72"o gpk'- '37"o gpk'- ""72"
 o gpk+z'3'tvenl"
 ?'33: .228'o gpk/'82'o gpk'
 ?'3.; 89""lco 'T': 'lco 'ngtlc"
 ?'2.468'j ctk'é'3'j ctk'
 "

g0 Dlc{c""{cpi 'f kr gtnwncp"

- Dlc{c'dgwp""
 Dlc{c"" ?'xqmo g'z'pkck'J URM'
 " " ?'5.25""o ⁵z'Tr 00432068./"
 " " ?'Tr 05088: 0783.35"
- Dlc{c'ugy c'crv"? 'Tr 09022022./152'o ⁵"
 *Uwo dgt"<RV0Xctkc'Wucj c'Dgwp+"
 Wpwnlr gt'o ⁵?" 'Tr 04550555./"
 ?'Tr 04550555./""z'5.25'o ⁵"
 ?'Tr 09290222./"
- Vqven'idlc{c"
 ?'""Dlc{c"- 'Dlc{c'ugy c'crv"
 ?'""Tr 05088: 0783.35"- 'Tr 09290222./"
 ?'""Tr 060970783.35"

60606 Rngtltccp'Rgo dqpi nctcp'Dgnkukpi "

Rngtltccp"r go dqpi nctcp'dgnkukpi "vpi i c"
 E" fngtltncp" f gpi cp" o go dqpi nct" dgnkukpi 0'
 F lo cpc" f crco " ucw" i twr " vgtfkk' f ctk' O cpfqt."

Uguwck' f gpi cp" vcdgn' 6045." dcj y c" lco "ngtlc" wpmwn'
o go dwnc" f cp" o go dgtulj ncp" egvncp" lgpku" vcpj "
cf crnj "ugrco c"5"6"7"lco "fki wpcncp"5"lco "l"32"o 4"
dgnkukpi +0"

f0 Y cmw"

Y cmw""? $\frac{\text{Volume}}{10 \text{ m}^2} \times 3 \text{ jam}$ "

" """"""? $\frac{44,61 \text{ m}^2}{10 \text{ m}^2} \times 3 \text{ jam}$ "? 35.5: "lco 'é"4"j ctk'

"

g0 Rtqf wmkxkcu"

Rtqf wmkxkcu" ? $\frac{\text{volume}}{\text{durasi}} = \frac{44,61 \text{ m}^2}{2 \text{ hari}}$ "
? "44.53"o 4"l"j ctk'

60 RGMGTLCPP'DCLC''

600 Rngmtlccp"Vcpi i c"Dclc"

Rngmtlccp" vcpj i c" dclc" flngtlcncp" f gpi cp"
o gpi i wpcncp"vgpci c"o cpwuk0'F ko cpc"fcrc "ucw"i twr "
vgtf k'f ctk'o cpf qt."ngr crnc"wnncpi "dguk"wnncpi "dguk"fcpc"
r go dcpw"wnncpi 0'Dgtknw"cpckuc"J URM'4237"Rngmtlccp"
vcpj i c"<

Vcdgn'605: 'PlckJ URM'4237'Uwtcdc{ c/'Rngmtlccp'Rgo cucpi cp'DgukRt qhhl'

24.03.02.01	Pekerjaan Pemasangan Besi Profil	kg			
<u>Upah</u>					
23.02.04.01.01.F	Mandor	0,003	O.H	120.000	360
23.02.04.01.02.F	Kepala Tukang batu	0,006	O.H	110.000	660
23.02.04.01.03.F	Tukang Batu	0,060	O.H	105.000	6.300
23.02.04.01.04.F	Pembantu Tukang	0,060	O.H	99.000	5.940

					Jumlah :	13.260
Bahan :						
20.02.04.01.04.F	Besi Profil WF >= 200 mm	1,150	Kg	21.000		24.150
					Jumlah :	24.150
					Nilai HSPK :	37.410
c0	Xq ⁿ wo g'r gngtlccp" "	?": 76.5; 'm " "				
d0	Lwo ncj "ngdwwj cp'lwo dgt'f c{c"					
	O cpf qt" "	$? \frac{0,003}{0,003} \times 1 \text{ grup} ? "3" \text{Qtcpi} "$				
	Mgr cr "Vwncpi "	$? \frac{0,006}{0,003} \times 1 \text{ grup} ? "4" \text{Qtcpi} "$				
	Vwncpi " "	$? \frac{0,060}{0,003} \times 1 \text{ grup} ? "42" \text{Qtcpi} "$				
	Rgo dcpw"Vwncpi "	$? \frac{0,060}{0,003} \times 1 \text{ grup} ? "42" \text{Qtcpi} "$				
e0	Mcr cukcu'r tqf wmk" *S v" "					
	Rtqf wmkcu'r gt'qtcp " "	$? \frac{1 \text{ hari}}{0,060 \text{ hari}} \times 1 \text{ kg} "$				
	" " " "	$? "38.89" \text{m} "$				
	F kgpecpcncp'lwo ncj 'i twr "	$? "3" \text{i twr} "$				
	Mcr cukcu'r tqf wmk" *S v" "	$? " \text{i twr} "z" \text{r tqf wmkcu} "$				
	" " " "	$? "3z42" \text{i twr} "z" \text{r} "38.89" \text{m} "$				
	" " " "	$? "555.5" \text{m} \text{lj ctk} "$				
f0	Y cmw'					
	Y cmw'	$? \frac{\text{Volume}}{\text{Kapasitas produksi}} "$				
	" "	$? \frac{854,39 \text{ kg}}{333,3 \text{ kg/hari}} ? "4.78" \text{j ctk} \text{'5"j ctk} "$				
g0	Dlc{c}{cpi "fkr gtrncp"					
	Dlc{c}	$? "xqnwo g'z" \text{pkckJ URM} "$				
	" "	$? ": 76.5; "z" \text{Tr 0590632./} "$				
	" "	$? " \text{Tr 0530 8404; .; 2} "$				

6004 Rngntlccp"Rgpi gecvp"Dclc"

Rngntlccp" r gpi gecvp" dclc" f kngtlcnep" f gpi cp"
o gpi i wpcnep"vgpci c"o cpwuk0'F ko cpc"f crco "ucw"i twr "
ygtf k'f ctk'o cpf qt."ngr crc"wnepi "dguk"wnepi "dguk"fcp"
r go dcpw"wnepi 0'Dgtknw"cpckuc"J URM'4237"Rngntlccp"
r gpi gecvp"<"

Vcdgri605; 'P kckJ URM'4237'Uwtcdc{ c'6'Rgpi gecvp'F cuct'O gpkDgk'

24.04.02.09	Pengecatan Dasar Meni Besi		m²		
<u>Upah</u>					
23.02.04.01.01.F	Mandor	0,010	O.H	120.000	1.200
23.02.04.01.02.F	Kepala Tukang batu	0,020	O.H	110.000	2.200
23.02.04.01.03.F	Tukang Batu	0,200	O.H	105.000	21.000
23.02.04.01.04.F	Pembantu Tukang	0,020	O.H	99.000	1.980
Jumlah :					26.380
<u>Bahan :</u>					
20.0201.01.06.01.01.F	Cat Besi	0,100	Kg	63.000	6.300
20.01.01.31.01.F	Kuas 4 inchi	0,010	Buah	12.000	120
Jumlah :					6.420
Nilai HSPK :					32.800

c0 Xqno g'r gngtlccp" " ? "75.46"o 4"

d0 Lwo nej "ngdwwj cp"lwo dgt'f c{c"

O cpf qt" " ? $\frac{0,010}{0,010} \times 1 \text{ grup} ? "3"Qtcpi "$

Mgr crc"Vwnepi " ? $\frac{0,020}{0,010} \times 1 \text{ grup} ? "4"Qtcpi "$

Vwnepi " " ? $\frac{0,200}{0,010} \times 1 \text{ grup} ? "42"Qtcpi "$

Rgo dcpw"Vwnepi " ? $\frac{0,020}{0,010} \times 1 \text{ grup} ? "4"Qtcpi "$

e0 Mkr cukcu'r tqf wmk"S vH" "

Rtqf wmkhscu'r gt"qtcpj " ? $\frac{1 \text{ hari}}{0,20 \text{ hari}} \times 1 \text{ m}^2$

" " " " ? "7"o 4"
F k t g p e c p e n e p " l w o n j " i t w r " ? "3"i t w r "
M e r c u k u " r t q f w m k " S v i " ? " " i t w r " z " r t q f w m k k u c u "
" " " " ? "3z42+ i t w r " z "7"o 4"
" " " " ? "322"o 4 j c t k "
f0 Y c m w "
Y c m w " ? " $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "
" " ? " $\frac{53,24 \text{ m}^2}{100 \text{ m}^2/\text{hari}}$ " ? "2.754"j c t k k e "3"j c t k "
g0 D l c { c " { c p i " f k r g t n w n e p "
D l c { c " ? " x q n w o g " z " p k r c k J U R M "
" " ? "75.46"z "T r 0540 22./"
" " ? "T r 030680494./"

6005 R n g n t l c c p " T e p i n e " C v e r "
R n g n t l c c p " t e p i n e " c v e r " f k n g t l e n e p " f g p i c p "
o g p i i w p e n e p " v g p c i c " o c p w u k 0 F k o c p e " f e r c o " u e w w " i t w r "
v g f k k " f c t k " o c p f q t . " n g r c r e " w n e p i " d g u k " w n e p i " d g u k " f c p "
r g o d e p w " w n e p i 0 D g t k n w " c p e r k u c " J U R M " 4237 " R n g n t l c c p "
t e p i n e " c v e r " * V e d g n i 6045 " P k r c k J U R M " 4237 " U w t e d c { c " / "
R n g n t l c c p " R g o c u e p i c p " D g u k " R t q h n " <

24.03.02.01	Pekerjaan Pemasangan Besi Profil	kg			
Upah					
23.02.04.01.01.F	Mandor	0,003	O.H	120.000	360
23.02.04.01.02.F	Kepala Tukang batu	0,006	O.H	110.000	660
23.02.04.01.03.F	Tukang Batu	0,060	O.H	105.000	6.300
23.02.04.01.04.F	Pembantu Tukang	0,060	O.H	99.000	5.940
Jumlah :				13.260	
Bahan :					
20.02.04.01.04.F	Besi Profil WF >= 200 mm	1,150	Kg	21.000	24.150

	Jumlah :	24.150
	Nilai HSPK :	37.410

- "
- c0 Xqno g'r gntlccp" " ? "35045.59"mi "
- d0 Lwo nj "hgdwwj cp"lwo dgt'f c{c"
- O cpf qt" " ? $\frac{0,003}{0,003} \times 1 \text{ grup}$? "3"Qtcp " "
- Mgr crc"Vwnepi " ? $\frac{0,006}{0,003} \times 1 \text{ grup}$? "4"Qtcp " "
- Vwnepi " " ? $\frac{0,060}{0,003} \times 1 \text{ grup}$? "42"Qtcp " "
- Rgo dcpw"Vwnepi " ? $\frac{0,060}{0,003} \times 1 \text{ grup}$? "42"Qtcp " "
- "
- e0 Mkr cukcu'r tqf wmk" *S v+" "
- Rtqf wmkkcu'r gt"qtcp " ? $\frac{1 \text{ hari}}{0,060 \text{ hari}} \times 1 \text{ kg}$ "
- " " " " ? "38.89"mi "
- F kgpepcncp"lwo nj "i twr " ? "3"i twr "
- Mkr cukcu'r tqf wmk" *S v+" ? " "i twr "z"r tqf wmkkcu"
- " " " " ? "3z42+i twr "z"38.89"mi "
- " " " " ? "555.5"mi lj ctk"
- f0 Y cmw"
- Y cmw" ? $\frac{\text{Volume}}{\text{Kapasitas produksi}}$ "
- " " ? $\frac{12.323,37 \text{ kg}}{333,3 \text{ kg/hari}}$? "3; .; ; "j ctké"42"j ctk"
- "
- g0 Dkc{c" {cpi "f k gtnwncp"
- Dkc{c" ? "xqno g"z"pkck"J URM"
- " " ? "35045.59"z"Tr 0590632./"
- " " ? "Tr 06; : 06490493.92"

P q "	P co c "Rngt lccp"	Xqrŋ'	Ucŋ'	Lo rŋ' i twr "	Rtqf wmkscu"		Fwtcuk'	
					Qtcpi f'cŋv'	S v'	Lco "	J ctk'
30'	Ncpvck'ngt lc'vgdci7'eo "	34.43"	o 5"	3"	2.828"	34.95"	"	3"
40'	Rqgt "	"	"	"	"	"	"	"
"	Dgnkŋkpi "	4: : .6; "	o 4"	3"	3.; 45"	5: .68"	"	: "
"	Vwŋpi cp"	3; 727"	ni "	3"	364.: "	4793.6"	"	: "
"	Rgpi geqtc p"	372.; 3"	o 5"	3"	82.6: "	"	49.4"	6"
50'	Uqqlh'	"	"	"	"	"	"	"
"	Dgnkŋkpi "	592.: : "	o 4"	4"	3.; 45"	98.; 45"	"	7"
"	Vwŋpi cp"	3446; .4"	ni "	3"	364.: "	4793.6"	"	7"
"	Rgpi geqtc p"	74.39"	o 5"	3"	82.6: "	"	: .; 9"	4"
60'	Mqŋqo "fcp"Dgvp" Hico g'r lpw'wco c"	"	"	"	"	"	"	"
"	Dgnkŋkpi "	6: : .36"	o 4"	4"	3.737"	82.828"	"	: "
"	Vwŋpi cp"	32422.: "	ni "	3"	364.: "	4793.6"	"	6"
"	Rgpi geqtc p"	88.; 3"	o 5"	3"	82.6: "	"	34.5"	4"
70'	F lpf lpi "Eqtg'f cp" Uj gcty cni'gdci'47'eo "	"	"	"	"	"	"	"
"	Dgnkŋkpi "	43; .58"	o 4"	4"	3.737"	82.828"	"	6"
"	Vwŋpi cp"	53; 5.: "	ni "	3"	364.: "	4793.6"	"	4"
"	Rgpi geqtc p"	49.64"	o 5"	3"	82.6: "	"	: .34"	4"
80'	Dcŋqŋi'Uj gcty cni'47 I72"	"	"	"	"	"	"	"
"	Dgnkŋkpi "	38.94"	o 4"	3"	3.737"	52.525"	"	3"
"	Vwŋpi cp"	536.45"	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtc p"	4.2; "	o 5"	3"	82.6: "	"	3.; 7"	3"
90"	Mqŋqo "r tgmku'37 I37" f cp"dŋqŋi'ncvck'34 I37"	"	"	"	"	"	"	"
"	Dgnkŋkpi "	97.955"	o 4"	3"	3.737"	52.525"	"	5"
"	Vwŋpi cp"	32: 5.8: "	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtc p"	7.8: "	o 5"	3"	2.828"	34.343"	"	3"
: 0'	Dgvp"Dgt wŋpi "Ncpvck'	"	"	"	"	"	"	"
"	Vwŋpi cp"	9; ; 5.87"	ni "	3"	364.: "	4793.6"	"	6"

P q"	P co c'Rgngtlccp"	Xqit'	UcV'	Lo it' i twr "	Rtqf wmkscu"		F wtcuk'	
					Qtcp l'crv'	S v'	Lco "	J ctk'
"	Rgpi geqtcq"	4.2; "	o 5"	3"	82.6: "	"	48.5"	6"
; 0'	Rrcv'dgqp'tco r "vgden' 32'eo "	3"	o 5"	3"	2.828"	34.343"	"	3"
X0'	RGMGTLCPP "VCP I I C"NCP VCK3"							
30'	Vcpi i c"C"	"	"	"	"	"	"	"
"	Dgnkukpi "	66.83"	o 4"	3"	3.737"	52.525"	"	4"
"	Vwcp i cp"	3559.59"	m "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcq"	8.45"	o 5"	3"	82.6: "	"	4.27"	3"
40'	Vcpi i c"D"	"	"	"	"	"	"	"
"	Dgnkukpi "	45.: 9"	o 4"	3"	3.737"	52.525"	"	3"
"	Vwcp i cp"	94.: 36: "	m "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcq"	5.56"	o 5"	3"	82.6: "	"	3.; ; "	3"
50'	Vcpi i c"E"	"	"	"	"	"	"	"
"	Dgnkukpi "	44.: 8"	o 4"	3"	3.737"	52.525"	"	3"
"	Vwcp i cp"	364.: 79"	m "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcq"	5.25"	o 5"	3"	82.6: "	"	3.; ; "	3"
XK'	RGMGTLCPP "DGVQP "NCP VCK4"							
30'	Dcnqnl'f cp'Dcnqnl' Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkukpi "	: 82.85"	o 4"	4"	3.737"	82.828"	"	37"
"	Vwcp i cp"	42; 98.; "	m "	3"	364.: "	4793.6"	"	; "
"	Rgpi geqtcq"	333.; 3"	o 5"	3"	82.6: "	"	54.7"	7"
40'	Rrcv'f gni'vgden'34'eo "	"	"	"	"	"	"	"
"	Dgnkukpi "	: 55.5: "	o 4"	4"	3.737"	82.828"	"	36"
"	Vwcp i cp"	33926.; "	m "	3"	364.: "	4793.6"	"	7"
"	Rgpi geqtcq"	322.23"	o 5"	3"	82.6: "	"	4; .2"	6"
50'	Mqmo 'f cp'Mqmo " Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkukpi "	558.56"	o 4"	4"	3.737"	82.828"	"	8"
"	Vwcp i cp"	936; .23"	m "	3"	364.: "	4793.6"	"	5"

P q"	P co c'Rngtlccp"	Xqrŋ'	Ucŋ'	Lo nŋ' i twr"	Rtqf wmlkscu"		Fwtcul'	
					Qtcp l'cnev'	S v'	Lco "	J ctk'
"	Rgpi geqtcq"	69.85"	o 5"	3"	82.6: "	"	36.6"	4"
60'	DcrqniMqpuqniMcpqr k' f cp'DcrqniCpcniMcpqr k'	"	"	"	"	"	"	"
"	Dgnkupi "	58.78"	o 4"	3"	3.737"	52.525"	"	4"
"	Vwrcpi cp"	; ; : .28"	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcq"	7.26"	o 5"	3"	82.6: "	"	4.24"	3"
70"	Rrcv'f gniMcpqr k'gdni' 32'eo "	"	"	"	"	"	"	"
"	Dgnkupi "	55.3"	o 4"	3"	3.737"	52.525"	"	4"
"	Vwrcpi cp"	693.748"	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcq"	5.53"	o 5"	3"	82.6: "	"	3.; ; "	3"
80'	Rrcv'Hcuf g'32 l67'f cp" 37 l68"	"	"	"	"	"	"	"
"	Dgnkupi "	334.7; "	o 4"	3"	30737"	520525"	"	6"
"	Vwrcpi cp"	; 97.43"	ni "	3"	3640 "	479306"	"	3"
"	Rgpi geqtcq"	: .56"	o 5"	3"	8206: "	"	6.2"	"
90'	F lpf lpi 'Uj gcty cm"	"	"	"	"	"	"	"
"	Dgnkupi "	394.44"	o 4"	3"	3.737"	52.525"	"	8"
"	Vwrcpi cp"	4739.35"	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcq"	43.83"	o 5"	3"	82.6: "	"	: .34"	4"
: 0'	Mqrqo 'Rtemku'f cp" DcrqniNvcck'	"	"	"	"	"	"	"
"	Dgnkupi "	356"	o 4"	3"	3.737"	52.525"	"	7"
"	Vwrcpi cp"	3; 39.66"	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcq"	32.27"	o 5"	3"	2.828"	34.343"	"	3"
XK	RGMGTLCPP "VCP I I C"NCP VCK4"							
30'	Vcpi i c'C"	"	"	"	"	"	"	"
"	Dgnkupi "	66.83"	o 4"	3"	3.737"	52.525"	"	4"
"	Vwrcpi cp"	3559.59"	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcq"	8.45"	o 5"	3"	82.6: "	"	4.27"	3"
40'	Vcpi i c'D"	"	"	"	"	"	"	"

P q"	P co c'Rgngtlccp"	Xqit'	UcV'	Lo 10' i twr "	Rtqf wmkscu"		F wtcuk'	
					Qtcp l'crv'	S v'	Lco "	J ctk'
"	Dgnkulpi "	45.: 9"	o 4"	3"	3.737"	52.525"	"	3"
"	Vwrcpi cp"	94.: 36: "	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcq"	5.56"	o 5"	3"	82.6: "	"	3.; ; "	3"
50'	Vcpi i c'E "	"	"	"	"	"	"	"
"	Dgnkulpi "	48.: 5"	o 4"	3"	3.737"	52.525"	"	3"
"	Vwrcpi cp"	: 28.66"	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcq"	5.4; "	o 5"	3"	82.6: "	"	3.; : "	3"
XKK'	RGMGTLLCCP "DGVQP "NCP VCK5"							
30'	Dcrqni'f cp'Dcrqni' Uj gcty cni'	"	"	"	"	"	"	"
"	Dgnkulpi "	: 8; .82"	o 4"	4"	3.737"	82.828"	"	37"
"	Vwrcpi cp"	43368.3"	ni "	3"	364.: "	4793.6"	"	; "
"	Rgpi geqtcq"	334.: 5"	o 5"	3"	82.6: "	"	56.; "	7"
40'	Rrcv'f gni'gdci'34'eo "	"	"	"	"	"	"	"
"	Dgnkulpi "	: 58.5: "	o 4"	4"	3.737"	82.828"	"	36"
"	Vwrcpi cp"	33969.3"	ni "	3"	364.: "	4793.6"	"	7"
"	Rgpi geqtcq"	322.59"	o 5"	3"	82.6: "	"	52.: "	6"
50'	Mqirgo 'f cp'Mqirgo " Uj gcty cni'	"	"	"	"	"	"	"
"	Dgnkulpi "	545.2"	o 4"	4"	3.737"	82.828"	"	8"
"	Vwrcpi cp"	8: 74.: 3"	ni "	3"	364.: "	4793.6"	"	5"
"	Rgpi geqtcq"	67.85"	o 5"	3"	82.6: "	"	36.6"	4"
60'	Fkpf lpi 'Uj gcty cni'	"	"	"	"	"	"	"
"	Dgnkulpi "	394.: : "	o 4"	3"	3.737"	52.525"	"	8"
"	Vwrcpi cp"	4739.35"	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcq"	43.83"	o 5"	3"	82.6: "	"	: .34"	4"
70'	Mqirgo 'Rtcmku'"	"	"	"	"	"	"	"
"	Dgnkulpi "	7.; 5"	o 4"	3"	3.737"	52.525"	"	5"
"	Vwrcpi cp"	3353.5: "	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcq"	9; .289"	o 5"	3"	2.828"	34.343"	"	3"

P q"	P c o c "Rngtlccp"	Xqrŋ	Ucŋ	Lo nŋ i twr "	Rtqf wmlkscu"		Fwtcul'	
					Qtcp l'cnev'	S v'	Lco "	J ctk'
80'	Rrcv'ukt k' l'cugf g"	"	"	"	"	"	"	"
"	Dgnkukpi "	: : .38"	o 4"	4"	3.737"	82.828"	"	4"
"	Vwrcpi cp"	985.79"	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcp"	8.75"	o 5"	3"	82.6: "	"	4.27"	3"
90'	Dcrqnl'Ncwk'f cp'tlpi " Utkr "3442"	"	"	"	"	"	"	"
"	Dgnkukpi "	79.29"	o 4"	3"	3.737"	52.525"	"	3"
"	Vwrcpi cp"	: 38.7: "	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcp"	6.4: "	o 5"	3"	2.828"	34.343"	"	3"
KZ "	RGMGTLCCP "VCP I I C "NCP VCK5"							
30'	Vcpi i c"C"	"	"	"	"	"	"	"
"	Dgnkukpi "	66.83"	o 4"	3"	3.737"	52.525"	"	4"
"	Vwrcpi cp"	3559.59"	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcp"	8.45"	o 5"	3"	82.6: "	"	4.27"	3"
40'	Vcpi i c"D"	"	"	"	"	"	"	"
"	Dgnkukpi "	45.: 9"	o 4"	3"	3.737"	52.525"	"	3"
"	Vwrcpi cp"	94: .36: "	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcp"	5.56"	o 5"	3"	82.6: "	"	3.: ; "	3"
50'	Vcpi i c"E"	"	"	"	"	"	"	"
"	Dgnkukpi "	48.: 5"	o 4"	3"	3.737"	52.525"	"	3"
"	Vwrcpi cp"	: 28.66"	ni "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcp"	5.4; "	o 5"	3"	82.6: "	"	3.: ; "	3"
Z "	RGMGTLCCP "DGVQP "NCP VCK6"							
30'	Dcrqnl'f cp'Dcrqnl' Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkukpi "	: 8; .82"	o 4"	4"	3.737"	82.828"	"	37"
"	Vwrcpi cp"	43368.3"	ni "	3"	364.: "	4793.6"	"	; "
"	Rgpi geqtcp"	334.: 5"	o 5"	3"	82.6: "	"	56.; "	7"
40'	Rrcv'f gnl'gdcr'34"eo "	"	"	"	"	"	"	"
"	Dgnkukpi "	: 3: .5: "	o 4"	4"	3.737"	82.828"	"	36"

P q"	P co c'Rgngtlccp"	Xqit'	UcW'	Lo 10' i twr "	Rtqf wmkscu"		F wtcuk'	
					Qtcp l'crv'	S v'	Lco "	J ctK'
"	Vwrcpi cp"	336; 6.5"	m "	3"	364.: "	4793.6"	"	7"
"	Rgpi geqtcpcp"	; : .43"	o 5"	3"	82.6: "	"	52.: "	6"
50'	Mqmo 'fcp'Mqmo " Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkukpi "	545.2"	o 4"	4"	3.737"	82.828"	"	8"
"	Vwrcpi cp"	8: 74.: 3"	m "	3"	364.: "	4793.6"	"	5"
"	Rgpi geqtcpcp"	67.85"	o 5"	3"	82.6: "	"	36.6"	4"
60'	F kpf kpi 'Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkukpi "	394.: : "	o 4"	3"	3.737"	52.525"	"	8"
"	Vwrcpi cp"	4739.35"	m "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcpcp"	43.83"	o 5"	3"	82.6: "	"	: .34"	4"
70'	Mqmo 'Rtcmkul'"	"	"	"	"	"	"	"
"	Dgnkukpi "	7.; 5"	o 4"	3"	3.737"	52.525"	"	5"
"	Vwrcpi cp"	3353.5: "	m "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcpcp"	9; .289"	o 5"	3"	2.828"	34.343"	"	3"
80'	Rrcvuktr 'l'ucgf g'"	"	"	"	"	"	"	"
"	Dgnkukpi "	: : .38"	o 4"	4"	3.737"	82.828"	"	4"
"	Vwrcpi cp"	985.79"	m "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcpcp"	8.75"	o 5"	3"	82.6: "	"	4.27"	3"
90'	Dcnqmi'Nvcck'fcp'tkpi " Utkr "3442"	"	"	"	"	"	"	"
"	Dgnkukpi "	79.29"	o 4"	3"	3.737"	52.525"	"	3"
"	Vwrcpi cp"	: 38.7: "	m "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcpcp"	6.4: "	o 5"	3"	2.828"	34.343"	"	3"
Z K	RGMGTICCP "VCPI I C'NCP VCK6"							
30'	Vcpi i c"C"	"	"	"	"	"	"	"
"	Dgnkukpi "	66.83"	o 4"	3"	3.737"	52.525"	"	4"
"	Vwrcpi cp"	3559.59"	m "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcpcp"	8.45"	o 5"	3"	82.6: "	"	4.27"	3"

P q"	P co c"Rngtllccp"	Xqrf'	Ucv'	Lo rf' i twr"	Rtqf wmlkscu"		Fwtcul'	
					Qtcp l'cnev'	S v'	Lco "	J ctk'
40'	Vcpi i c"D"	"	"	"	"	"	"	"
"	Dgnkukpi "	45.: 9"	o 4"	3"	3.737"	52.525"	"	3"
"	Vwrcpi cp"	94.: 36: "	mi "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcp"	5.56"	o 5"	3"	82.6: "	"	3.; ; "	3"
Z K'	RGMGTLLCCP'DGVQP'NCP VCK7"							
30'	Dcqnlf'cp'Dcqnlf' Uj gcty cmi'	"	"	"	"	"	"	"
"	Dgnkukpi "	: 8; .82"	o 4"	4"	3.737"	82.828"	"	37"
"	Vwrcpi cp"	43368.3"	mi "	3"	364.: "	4793.6"	"	; "
"	Rgpi geqtcp"	334.: 5"	o 5"	3"	82.6: "	"	56.; "	7"
40'	Rrcv'f gnlvgden'34"eo "	"	"	"	"	"	"	"
"	Dgnkukpi "	: 3: .5: "	o 4"	4"	3.737"	82.828"	"	36"
"	Vwrcpi cp"	336; 6.5"	mi "	3"	364.: "	4793.6"	"	7"
"	Rgpi geqtcp"	; : .43"	o 5"	3"	82.6: "	"	52.: "	6"
50'	Mmqo 'fcp'Mmqo " Uj gcty cmi'	"	"	"	"	"	"	"
"	Dgnkukpi "	545.2"	o 4"	4"	3.737"	82.828"	"	8"
"	Vwrcpi cp"	8: 74.: 3"	mi "	3"	364.: "	4793.6"	"	5"
"	Rgpi geqtcp"	67.85"	o 5"	3"	82.6: "	"	36.6"	4"
60'	Fkpf lpi "Uj gcty cmi'	"	"	"	"	"	"	"
"	Dgnkukpi "	394.: : "	o 4"	3"	3.737"	52.525"	"	8"
"	Vwrcpi cp"	4739.35"	mi "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcp"	43.83"	o 5"	3"	82.6: "	"	: .34"	4"
70'	Mmqo 'Rtcmlu"	"	"	"	"	"	"	"
"	Dgnkukpi "	7; .42"	o 4"	3"	3.737"	52.525"	"	4"
"	Vwrcpi cp"	: 69.33"	mi "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcp"	6.66"	o 5"	3"	2.828"	34.343"	"	3"
80'	Rrcv'uklr 'lcugf g'"	"	"	"	"	"	"	"
"	Dgnkukpi "	349.29"	o 4"	4"	3.737"	82.828"	"	5"

P q"	P co c'Rngntlccp"	Xqit'	UcV'	Lo it' i twr "	Rtqf wmkscu"		F wtcuk'	
					Qtcp l'crv'	S v'	Lco "	J ctk'
"	Vwrcpi cp"	3: 3: .4"	mi "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcq"	; .75"	o 5"	3"	82.6: "	"	4.27"	3"
90'	Dcrqnl'NvcKf'cp'tkpi " Ukkf'3442"	"	"	"	"	"	"	"
"	Dgnkukpi "	74.89"	o 4"	3"	3.737"	52.525"	"	3"
"	Vwrcpi cp"	975.84"	mi "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcq"	5.; 7"	o 5"	3"	2.828"	34.343"	"	3"
Z KK'	RGMGTICCP "VCP I I C"DCIC"							
30'	Rngntlccp'Dclc"	: 76.5; "	mi "	3"	38.89"	555.5"	"	5"
40'	Rgpi gecvcp"	75.46"	o 4"	3"	7.22"	322"	"	3"
Z KK'	RGMGTICCP "DGVQP "CVC"							
30'	Dcrqm'Dcrqnl'Mqpuqn' f cp'Dcrqnl'Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkukpi "	74; .5; "	o 4"	4"	3.737"	82.828"	"	; "
"	Vwrcpi cp"	34227.; "	mi "	3"	364.: "	4793.6"	"	7"
"	Rgpi geqtcq"	89.33"	o 5"	3"	82.6: "	"	42.8"	5"
40'	RrcvF gnlvgdcr'34'eo "	"	"	"	"	"	"	"
"	Dgnkukpi "	625.62"	o 4"	4"	3.737"	82.828"	"	9"
"	Vwrcpi cp"	7887.: 3"	mi "	3"	364.: "	4793.6"	"	5"
"	Rgpi geqtcq"	6: .63"	o 5"	3"	82.6: "	"	36.6"	4"
50'	Rrcv'Ngwxg'f cp'Nlur rcrn' dgvqp'vgdcr'32'eo "	"	"	"	"	"	"	"
"	Dgnkukpi "	585.37"	o 4"	4"	3.737"	82.828"	"	8"
"	Vwrcpi cp"	4: 6; .7; "	mi "	3"	364.: "	4793.6"	"	4"
"	Rgpi geqtcq"	3: .3; "	o 5"	3"	82.6: "	"	8.35"	3"
60'	Mqrjo "Rtcmlu'34B4." Dcrqnl'NvcK'34B7.'f cp" Tkpi 'I cy gr'34B7"	"	"	"	"	"	"	"
"	Dgnkukpi "	74.89"	o 4"	3"	3.737"	52.525"	"	6"
"	Vwrcpi cp"	975.84"	mi "	3"	364.: "	4793.6"	"	4"

P q "	P co c "Rngtlccp"	Xqrŋ	Ucŋ	Lo nŋ i tw "	Rtqf wmlkscu"		F wtcul'	
					Qtcp l'cŋv'	S v'	Lco "	J ctK'
"	Rgpi geqtcp"	5.; 7"	o 5"	3"	2.828"	34.343"	"	4"
70'	Rŋv'Vcŋpi "vgdŋl'34'eo "	"	"	"	"	"	"	"
"	Dgŋkŋpi "	427.38"	o 4"	4"	3.737"	82.828"	"	6"
"	Vwŋpi cp"	559: .75"	m "	3"	364.: "	4793.6"	"	4"
"	Rgpi geqtcp"	46.84"	o 5"	3"	82.6: "	"	: .3: "	4"
80'	Rŋv'f gŋl'Nkŋ'vgdŋl'34eo "	"	"	"	"	"	"	"
"	Dgŋkŋpi "	34.; 4"	o 4"	3"	3.737"	52.525"	"	3"
"	Vwŋpi cp"	434.92"	m "	3"	364.: "	4793.6"	"	3"
"	Rgpi geqtcp"	3.77"	o 5"	3"	82.6: "	"	3.; 7"	3"
ZX"	RGMGTLCCP'TCPI MC'DCLC"							
30'	Rngtlccp'Dclc"	354; 7.6"	m "	4"	38.89"	888.89"	"	42"
40'	Cpi mŋ'dcw'J VD'Ó3; "	: 2"	dj "	"	"	"	"	/"
50'	Dcw'O wŋ'Ó"3; "	42: "	dj "	"	"	"	"	/"
60'	Dcw'O wŋ'Ó"34"	; 82"	dj "	"	"	"	"	/"
70'	Lctwo "Mgtcu'Ó"3; "	4: "	dj "	"	"	"	"	/"

Vcdgri6063'VcdgriTgnr lswr ukDlc{ c'Rngntlccp'Ut wnwrt "

P q"	P co c'Rngntlccp"	Xqr0'	Uc0'	J cti c"				
				Dcj cp"*Tr +"	Crcv"*Tr +"	Rngntlc"*Tr +"	J cti c'Ucwcp"*Tr +"	Vqvcrl"*Tr +"
K	RGMGTlCCP "RGTUKRCP "							
30'	Rgo dgtulj cp" Ncr cpi cp"	3758.; 8"	o 4"	/"	/"	/"	370 22"	4606590886"
40'	Rgo cucpi cp'Dqy r neni'	362"	wnl'	/"	/"	/"	3240 ; 2"	36063: 0822"
50'	Rgo ci ctcp'Mgkiki "	99.79"	o "	/"	/"	/"	7330865.7"	5; 08: : 08: 8.5"
60'	F k gmik'Mgv'	47"	o 4"	/"	/"	/"	308440 79"	6207930647"
KK	RGMGTlCCP "VCP CJ "							
30'	I cricp'Vcpcj 'wpwnl' r qpf cuk'r qgt.'luqql'	; ; 6.24"	o 5"	/"	/"	/"	580722.3"	5804: 30 4; .6"
40'	Wtvi 'r cuk'gdcrl32"eo "	328.77"	o 5"	/"	/"	/"	4250822"	4308620527"
50'	Wtvi 'vcpcj 'ngo dcrk'	99: .5: "	o 5"	/"	/"	/"	49072"	430822067.22"
60'	Wtvi 'uktwdcy cj " rcpck'gdcrl64"eo "	549.48"	o 5"	/"	/"	/"	4370 8; .8"	92086706: 7.5"
70'	Dwepi 'vcpcj 'i cricp"	437.86"	o 5"	/"	/"	/"	630497"	: 0 220763"
KKK	RGMGTlCCP "RQPF CUK'							
30'	Rgo cpepci cp"	5084: "	o "	7; 80 29.76"	472022"	490722022"	/"	408980848092.49"
40'	Rgpi grucup"	634: 2"	eo "	/"	/"	40732.42"	/"	3250843078.22"
50'	Rgecj 'ngr crc'r cpepci "	398"	dj "	/"	/"	3; : 022"	/"	560 6: 022"
60'	Rqpf cuk'dcw'hcrk' r qy gt'j qwug"	7.43"	o 5"	/"	/"	/"	3024; 044; .8"	708404: 8.4"

P q"	P eo c'Rngntlccp"	Xqrf'	Ucv0'	J cti c"				
				Dcj cp"*Tr +"	Crcv"*Tr +"	Rngntlc"*Tr +"	J cti c'Ucwcp"*Tr +"	Vqwn"*Tr +"
70'	Rgpi gdqtcp"Ō'52"eo " N?8"o "	57"	vkkn'	/"	/"	/"	548.: : 2"	3306620 22"
KX"	RGMGT LCCP "DGVQP "NCP VCK3"							
30'	Ncpvck'ngtlc'vgdcr'7" eo "	34.43"	o 5"	/"	/"	/"	; : 30 2: .69"	330 : ; 024.64"
40'	Rqgt"	"	"	"	"	"	"	"
"	Dgnkukpi "	4: : .6; "	o 4"	/"	/"	/"	45: 0; 2"	730758029.48"
"	Vwrcpi cp"	3; 727"	mi "	/"	/"	/"	3606; : "	4: 400: 506: 4.44"
"	Rgpi geqtcp"	372.; 3"	o 5"	9; 7022"	: 5055.55"	4270487"	/"	4390 4806; .65"
50'	Uqqh'	"	"	"	"	"	"	"
"	Dgnkukpi "	592.: : "	o 4"	/"	/"	/"	45: 0; 2"	880477047.58"
"	Vwrcpi cp"	3446; .4"	mi "	/"	/"	/"	3606; : "	39906650878.4; "
"	Rgpi geqtcp"	74.39"	o 5"	9; 7022"	: 5055.55"	4270487"	/"	970590853.8; "
60'	Mqmqo "f cp'Dgvqp" Hico g'r lkw'wco c"	"	"	"	"	"	"	"
"	Dgnkukpi "	6: : .36"	o 4"	/"	/"	/"	59: 0 22"	35: 08: 20773.49"
"	Vwrcpi cp"	32422.: "	mi "	/"	/"	/"	3606; : "	3690 ; 407: .47"
"	Rgpi geqtcp"	88.; 3"	o 5"	9; 7022"	: 5055.55"	4270487"	/"	; 808420698.76"
70'	F lpf lpi "Eqtg'f cp" Uj gcty cni'vgdcr'47"eo "	"	"	"	"	"	"	"
"	Dgnkukpi "	43; .58"	o 4"	/"	/"	/"	59: 0 22"	8405420898.22"

P q"	P co c'Rngntlccp"	Xqrf'	Ucv0'	J cti c"				
				Dcj cp"*Tr +"	Crcv"*Tr +"	Rngntlc"*Tr +"	J cti c'Ucwcp"*Tr +"	Vqwn"*Tr +"
"	Vwrcpi cp"	53; 5.: "	ni "	/"	/"	/"	3606; : "	6805260 ; 7.66"
"	Rgpi geqtcq"	49.64"	o 5"	9; 70222"	: 50555.55"	4270487"	/"	5; 07; 80884.2; "
80'	Dcrqm'Uj gety cm'47 I72"	"	"	"	"	"	"	"
"	Dgnkukpi "	38.94"	o 4"	/"	/"	/"	45: 08; 2"	60 ; 20 42.22"
"	Vwrcpi cp"	536.45"	ni "	/"	/"	/"	3606; : "	60770859.5: "
"	Rgpi geqtcq"	4.2; "	o 5"	9; 70222"	: 50555.55"	4270487"	/"	5023: 0848.54"
90"	Mqrqo 'r'tgmku'37 B7" f cp'dcrqm'lc'ck'34 B7"	"	"	"	"	"	"	"
"	Dgnkukpi "	97.955"	o 4"	/"	/"	/"	45: 08; 2"	35074; 08; 4.22"
"	Vwrcpi cp"	32: 5.8: "	ni "	/"	/"	/"	3606; : "	3703304; 9.25"
"	Rgpi geqtcq"	7.8: "	o 5"	/"	/"	/"	30875065; .37"	80730756.5: "
: 0'	Dgvqp'Dgtwrcpi " Ncpck'	"	"	"	"	"	"	"
"	Vwrcpi cp"	9; ; 5.87"	ni "	/"	/"	/"	3606; : "	3370 ; 30 97.; 6"
"	Rgpi geqtcq"	4.2; "	o 5"	9; 70222"	: 50555.55"	4270487"	/"	346072: 0763.5; "
: 0'	Rrcv'dgvqp'tco r '\gcdcl' 32'eo "	3"	o 5"	/"	/"	/"	30875065; .37"	30875065; .37"
X0'	RGMGTLCPP "VCP I I C"NCP VCK3"							
30'	Vcpi i c"C"	"	"	"	"	"	"	"
"	Dgnkukpi "	66.83"	o 4"	/"	/"	/"	5; : 0222"	3307806; 4.36"
"	Vwrcpi cp"	3559.59"	ni "	/"	/"	/"	3606; : "	3; 05; : 08; 8.9: "
"	Rgpi geqtcq"	8.45"	o 5"	9; 70222"	: 50555.55"	4270487"	/"	: 0 ; 80837.9: "

P q"	P co c'Rngntlccp"	Xqrŋ'	Ucŋŋ'	J cti c"				
				Dcj cp"*Tr +"	Crcv"*Tr +"	Rngntlc"*Tr +"	J cti c'Ucwcp"*Tr +"	Vqwn"*Tr +"
40'	Vcpi i c'D"	"	"	"	"	"	"	"
"	Dgnkunkpi "	45.: 9"	o 4"	/"	/"	/"	567ŋ: 7"	8ŋ: 40 88.62"
"	Vwrcpi cp"	94: .36: "	ni "	/"	/"	/"	36ŋ: : "	32ŋ78ŋ24.97"
"	Rgpi geqtcq"	5.56"	o 5"	9; 7ŋ22"	: 5ŋ55.55"	427ŋ487"	/"	60 45ŋ47.: 2"
50'	Vcpi i c'E"	"	"	"	"	"	"	"
"	Dgnkunkpi "	44.: 8"	o 4"	/"	/"	/"	567ŋ: 7"	7ŋ 42ŋ5; .: 3"
"	Vwrcpi cp"	364.: 79"	ni "	/"	/"	/"	36ŋ: : "	32ŋ: : ŋ4: .66"
"	Rgpi geqtcq"	5.25"	o 5"	9; 7ŋ22"	: 5ŋ55.55"	427ŋ487"	/"	6ŋ97ŋ83.35"
XX	RGMGTLCPP'DGVQP'NCP VCR4"							
30'	Dcrqnl'f cp'Dcrqnl' Uj gcty cml'	"	"	"	"	"	"	"
"	Dgnkunkpi "	: 82.85"	o 4"	/"	/"	/"	5; : ŋ22"	478ŋ : : ŋ 59.29"
"	Vwrcpi cp"	42; 98.; "	ni "	/"	/"	/"	36ŋ: : "	526ŋ46ŋ66.: 2"
"	Rgpi geqtcq"	333.; 3"	o 5"	9; 7ŋ22"	: 5ŋ55.55"	427ŋ487"	/"	383ŋ28ŋ 67.: 3"
40'	Rrcv'f gnlvgdcr'34"eo "	"	"	"	"	"	"	"
"	Dgnkunkpi "	: 55.5: "	o 4"	/"	/"	/"	59: ŋ 22"	: 7ŋ76ŋ; 6.24"
"	Vwrcpi cp"	33926.; "	ni "	/"	/"	/"	36ŋ: : "	38; ŋ: : ŋ82.79"
"	Rgpi geqtcq"	322.23"	o 5"	9; 7ŋ22"	: 5ŋ55.55"	427ŋ487"	/"	366ŋ44ŋ; : .: 2"
50'	Mqmqo 'fcp'Mqmqo " Uj gcty cml'	"	"	"	"	"	"	"
"	Dgnkunkpi "	558.56"	o 4"	/"	/"	/"	59: ŋ 22"	: 7ŋ76ŋ; 6.24"

P q"	P co c'Rngntlccp"	Xqrl'	Ucv'	J cti c"				
				Dcj cp"*Tr +"	Crcv"*Tr +"	Rngntlc"*Tr +"	J cti c'Ucwcp"*Tr +"	Vqvcn"*Tr +"
"	Vwrcpi cp"	936; .23"	ni "	/"	/"	/"	3606; : "	3250868076.2: "
"	Rgpi geqtcq"	69.85"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	8: 0: 30732.62"
60'	DcrqniMqpuqni' Mcpqr k'f cp'Dcrqni' CpcniMcpqr k'	"	"	"	"	"	"	"
"	Dgnkukpi "	58.78"	o 4"	/"	/"	/"	5; : 022"	360740 5: .38"
"	Vwrcpi cp"	: : .28"	ni "	/"	/"	/"	3606; : "	36068; 0 79.86"
"	Rgpi geqtcq"	7.26"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	9049: 083.2: "
70"	Rrcv'f gniMcpqr k'vgden' 32'eo "	"	"	"	"	"	"	"
"	Dgnkukpi "	55.3"	o 4"	/"	/"	/"	59: 0 22"	34075: 04: 2.22"
"	Vwrcpi cp"	693.748"	ni "	/"	/"	/"	3606; : "	80 5806: 6.89"
"	Rgpi geqtcq"	5.53"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	6009; 0 25.63"
80'	Rrcv'Hcucf g"32167'f cp" 37168"	"	"	"	"	"	"	"
"	Dgnkukpi "	334.7; "	o 4"	/"	/"	/"	59: 0 22"	64086; 02; 4.22"
"	Vwrcpi cp"	: 97.43"	ni "	/"	/"	/"	3606; : "	36065: 0858.55"
"	Rgpi geqtcq"	: .56"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	3402650845.92"
90'	F kpf lpi 'Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkukpi "	394.44"	o 4"	/"	/"	/"	59: 0 22"	8706: 80 66.22"
"	Vwrcpi cp"	4739.35"	ni "	/"	/"	/"	3606; : "	5806; 506; 3.55"
"	Rgpi geqtcq"	43.83"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	530428077; .95"

P q"	P co c'Rngtllccp"	Xqr0'	Ucv0'	J cti c"				
				Dcj cp"*Tr +"	Crcv"*Tr +"	Rngtllc"*Tr +"	J cti c'Ucwcp"*Tr +"	Vqwn"*Tr +"
: 0'	Mqruo "Rtcmlu"fc p"	"	"	"	"	"	"	"
"	Dgnkukpi "	356"	o 4"	/"	/"	/"	45: 8; 2"	530 390682.22"
"	Vwrcpi cp"	3; 39.66"	mi "	/"	/"	/"	3606; : "	4909; ; 059.: 9"
"	Rgpi geqtcp"	32.27"	o 5"	/"	/"	/"	30875065; .37"	3307; 4085.69"
XKK	RGMGTILCCP "VCP I I C"NCP VCK4"							
30'	Vcpi i c"C"	"	"	"	"	"	"	"
"	Dgnkukpi "	66.83"	o 4"	/"	/"	/"	5; : 022"	37062: 0744.: 7"
"	Vwrcpi cp"	3559.59"	mi "	/"	/"	/"	3606; : "	3; 06; : 08; 8.9: "
"	Rgpi geqtcp"	8.45"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	: 0; 80837.9: "
40'	Vcpi i c"D"	"	"	"	"	"	"	"
"	Dgnkukpi "	45.: 9"	o 4"	/"	/"	/"	56706: 7"	: 04650 43.: 9"
"	Vwrcpi cp"	94: .36: "	mi "	/"	/"	/"	3606; : "	32078024.97"
"	Rgpi geqtcp"	5.56"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	60 450447.: 2"
50'	Vcpi i c"E"	"	"	"	"	"	"	"
"	Dgnkukpi "	48.: 5"	o 4"	/"	/"	/"	56706: 7"	; 0488032.69"
"	Vwrcpi cp"	: 28.66"	mi "	/"	/"	/"	3606; : "	3308; 309: ; .7; "
"	Rgpi geqtcp"	5.4; "	o 5"	9; 7022"	: 50555.55"	4270487"	/"	609730243.: 4"
XKK	RGMGTILCCP "DGVQP "NCP VCK5"							
30'	Dcrqnl'f cp"Dcrqnl' Uj gcty cni'	"	"	"	"	"	"	"

P q"	P co c'Rngntlccp"	Xqrf'	Ucv0'	J cti c"				
				Dcj cp"*Tr +"	Crcv"*Tr +"	Rngntlc"*Tr +"	J cti c'Ucwcp"*Tr +"	Vqwn"*Tr +"
"	Dgnkukpi "	: 8; .82"	o 4"	/"	/"	/"	5; : 022"	5680; ; 074.4: "
"	Vwrcpi cp"	43368.3"	ni "	/"	/"	/"	3606; : "	528079803; .5: "
"	Rgpi geqtcq"	334.: 5"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	3840 5706; ; .24"
40'	Rrcv'f gni'vgdcri'34"eo "	"	"	"	"	"	"	"
"	Dgnkukpi "	: 58.5: "	o 4"	/"	/"	/"	59: 0 22"	5380 430 7; .; 7"
"	Vwrcpi cp"	33969.3"	ni "	/"	/"	/"	3606; : "	392052; 0736.88"
"	Rgpi geqtcq"	322.59"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	3660 640489.67"
50'	Mqmqo 'f cp'Mqmqo " Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkukpi "	545.2"	o 4"	/"	/"	/"	59: 0 22"	34405730773.6; "
"	Vwrcpi cp"	8: 74.: 3"	ni "	/"	/"	/"	3606; : "	; ; 0574097.6: "
"	Rgpi geqtcq"	67.85"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	870 ; 50573.46"
60'	F kpf lpi 'Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkukpi "	394.: : "	o 4"	/"	/"	/"	59: 0 22"	8706: 80 66.22"
"	Vwrcpi cp"	4739.35"	ni "	/"	/"	/"	3606; : "	5806; 506; 3.55"
"	Rgpi geqtcq"	43.83"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	530428077; .95"
70'	Mqmqo 'Rtcnku'"	"	"	"	"	"	"	"
"	Dgnkukpi "	7.; 5"	o 4"	/"	/"	/"	45: 08; 2"	3: 0 540 : ; .55"
"	Vwrcpi cp"	3353.5: "	ni "	/"	/"	/"	3606; : "	3806230 37.5: "
"	Rgpi geqtcq"	9; .289"	o 5"	/"	/"	/"	30875065; .37"	80 5; 0 ; 6.39"
80'	Rrcv'uklr 'hcugf g'"	"	"	"	"	"	"	"

P q"	P co c'Rngtllccp"	Xqrŉ	Ucvŉ	J cti c"				
				Dcj cp"*Tr +"	Crcv"*Tr +"	Rngtllc"*Tr +"	J cti c"Ucwcp"*Tr +"	Vqvcn"*Tr +"
"	Dgnkukpi "	: : .38"	o 4"	/"	/"	/"	59: 0 22"	55ŉ; 5ŉ36.22"
"	Vwrcpi cp"	985.79"	ni "	/"	/"	/"	36ŉ; : "	33ŉ292ŉ9; .4; "
"	Rgpi geqtcp"	8.75"	o 5"	9; 7ŉ22"	: 5ŉ55.55"	427ŉ487"	/"	; 64; 0 5; .88"
9ŉ	DcrqniNcvckf cp'tlpi " Utkr "3442"	"	"	"	"	"	"	"
"	Dgnkukpi "	79.29"	o 4"	/"	/"	/"	45: 8; 2"	35ŉ; 4ŉ2; .55"
"	Vwrcpi cp"	: 38.7: "	ni "	/"	/"	/"	36ŉ; : "	330 5: 8; 6.46"
"	Rgpi geqtcp"	6.4: "	o 5"	/"	/"	/"	3ŉ75ŉ5; .37"	6ŉ 58ŉ4; .79"
KZ "	RGMGTLLCCP"VCPi I C"NCPVCKS"							
3ŉ	Vcpi i c"C"	"	"	"	"	"	"	"
"	Dgnkukpi "	66.83"	o 4"	/"	/"	/"	5; : ŉ22"	37ŉ2: 774.: 7"
"	Vwrcpi cp"	3559.59"	ni "	/"	/"	/"	36ŉ; : "	3; 8; : 8; 8.9: "
"	Rgpi geqtcp"	8.45"	o 5"	9; 7ŉ22"	: 5ŉ55.55"	427ŉ487"	/"	: 0; 8ŉ37.9: "
4ŉ	Vcpi i c"D"	"	"	"	"	"	"	"
"	Dgnkukpi "	45.: 9"	o 4"	/"	/"	/"	567ŉ: 7"	: 04650 43.: 9"
"	Vwrcpi cp"	94: .36: "	ni "	/"	/"	/"	36ŉ; : "	32ŉ78ŉ24.97"
"	Rgpi geqtcp"	5.56"	o 5"	9; 7ŉ22"	: 5ŉ55.55"	427ŉ487"	/"	60 45ŉ47.: 2"
5ŉ	Vcpi i c"E"	"	"	"	"	"	"	"
"	Dgnkukpi "	48.: 5"	o 4"	/"	/"	/"	567ŉ: 7"	; 0488ŉ32.69"
"	Vwrcpi cp"	: 28.66"	ni "	/"	/"	/"	36ŉ; : "	33ŉ; 3ŉ: ; .7; "
"	Rgpi geqtcp"	5.4; "	o 5"	9; 7ŉ22"	: 5ŉ55.55"	427ŉ487"	/"	6ŉ73ŉ43.: 4"

P q"	P co c'Rngntlccp"	Xqrl'	Ucv'	J cti c"				
				Dcj cp"*Tr +"	Crcv"*Tr +"	Rngntlc"*Tr +"	J cti c'Ucwcp"*Tr +"	Vqwn"*Tr +"
Z"	RGMGT LCCP "DGVQP "NCP VCK6"							
30'	Dcqnif' cp'Dcqnif' Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkukpi "	: 8; .82"	o 4"	/"	/"	/"	5; : 022"	5680; ; 074.4: "
"	Vwrcpi cp"	43368.3"	mi "	/"	/"	/"	3606; : "	528079803; .5: "
"	Rgpi geqtcq"	334.: 5"	o 5"	9; 7022"	: 5055.55"	4270487"	/"	3840 5706; ; .24"
40'	Rrcv'f gni'gdcr'34'eo "	"	"	"	"	"	"	"
"	Dgnkukpi "	: 3: .5: "	o 4"	/"	/"	/"	59: 0 22"	53202250 54.8: "
"	Vwrcpi cp"	336; 6.5"	mi "	/"	/"	/"	3606; : "	38806606; 2.33"
"	Rgpi geqtcq"	; : .43"	o 5"	9; 7022"	: 5055.55"	4270487"	/"	3630 45077.78"
50'	Mqrqo "f cp'Mqrqo " Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkukpi "	545.2"	o 4"	/"	/"	/"	59: 0 22"	3440730773.6; "
"	Vwrcpi cp"	8: 74.: 3"	mi "	/"	/"	/"	3606; : "	; ; 074097.6: "
"	Rgpi geqtcq"	67.85"	o 5"	9; 7022"	: 5055.55"	4270487"	/"	870 ; 5073.46"
60'	F lpf lpi 'Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkukpi "	394.: : "	o 4"	/"	/"	/"	59: 0 22"	8706; 80 66.22"
"	Vwrcpi cp"	4739.35"	mi "	/"	/"	/"	3606; : "	5806; 506; 3.55"
"	Rgpi geqtcq"	43.83"	o 5"	9; 7022"	: 5055.55"	4270487"	/"	530428077; .95"
70'	Mqrqo "Rtcmkv"	"	"	"	"	"	"	"
"	Dgnkukpi "	9; .289"	o 4"	/"	/"	/"	45: 08; 2"	3: 0284067; .65"

P q"	P co c'Rngntlccp"	Xqrl'	Ucv'	J cti c"				
				Dcj cp"*Tr +"	Crcv'*Tr +"	Rngtlc"*Tr +"	J cti c'Ucwcp"*Tr +"	Vqcn'*Tr +"
"	Vwrcpi cp"	3353.5: "	mi "	/"	/"	/"	3606; : "	3806240 37.5: "
"	Rgpi geqtcq"	7.; 5"	o 5"	/"	/"	/"	30875065; .37"	80 5; 0 ; 6.39"
80'	Rrcv'uklr 'lrcugf g'"	"	"	"	"	"	"	"
"	Dgnkukpi "	: : .38"	o 4"	/"	/"	/"	59: 0 22"	540 : 20 75.55"
"	Vwrcpi cp"	985.79"	mi "	/"	/"	/"	3606; : "	3: 084067; .65"
"	Rgpi geqtcq"	8.75"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	; 064; 0 5; .88"
90'	Dcnqnl'Ncvckf'cp'tkpi "	"	"	"	"	"	"	"
"	Uklr "3442"							
"	Dgnkukpi "	79.29"	o 4"	/"	/"	/"	45: 08; 2"	3507; 4092; .55"
"	Vwrcpi cp"	: 38.7: "	mi "	/"	/"	/"	3606; : "	330 5: 09; 6.46"
"	Rgpi geqtcq"	6.4: "	o 5"	/"	/"	/"	30875065; .37"	60 5804; .79"
Z K	RGMGTLCPP "VCP I I C"NCP VCK6"							
30'	Vcpi i c"C"	"	"	"	"	"	"	"
"	Dgnkukpi "	66.83"	o 4"	/"	/"	/"	5; : 022"	37062: 0744.: 7"
"	Vwrcpi cp"	3559.59"	mi "	/"	/"	/"	3606; : "	3; 05; : 08; 8.9: "
"	Rgpi geqtcq"	8.45"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	: 0 ; 80837.9: "
40'	Vcpi i c"D"	"	"	"	"	"	"	"
"	Dgnkukpi "	45.: 9"	o 4"	/"	/"	/"	56706: 7"	: 0650 43.: 9"
"	Vwrcpi cp"	94: .36: "	mi "	/"	/"	/"	3606; : "	32078024.97"
"	Rgpi geqtcq"	5.56"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	60 45047.: 2"
Z K	RGMGTLCPP "DGVQP "NCP VCK7"							

P q"	P co c'Rngntlccp"	Xqrŋ'	Ucvŋ'	J cti c"				
				Dcj cp"*Tr +"	Crcv"*Tr +"	Rngntlc"*Tr +"	J cti c'Ucwcp"*Tr +"	Vqwn"*Tr +"
30'	Dcrnŋf' cp'Dcrnŋf' Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkŋkpi "	: 8; .82"	o 4"	/"	/"	/"	5; : 022"	5680; ; 074.4: "
"	Vwrcpi cp"	43368.3"	mī "	/"	/"	/"	360; : "	528079803; .5: "
"	Rgpi geqtc p"	334.: 5"	o 5"	9; 7022"	: 5055.55"	4270487"	/"	3840 5706; ; .24"
40'	Rrcvŋf' gnŋvdcn'34'eo "	"	"	"	"	"	"	"
"	Dgnkŋkpi "	: 3: .5: "	o 4"	/"	/"	/"	59: 0 22"	5320250 54.8: "
"	Vwrcpi cp"	336; 6.5"	mī "	/"	/"	/"	360; : "	38806606; 2.33"
"	Rgpi geqtc p"	; : .43"	o 5"	9; 7022"	: 5055.55"	4270487"	/"	3630 45077.78"
50'	Mqŋqo 'f cp'Mqŋqo " Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkŋkpi "	545.2"	o 4"	/"	/"	/"	59: 0 22"	3440730773.6; "
"	Vwrcpi cp"	8: 74.: 3"	mī "	/"	/"	/"	360; : "	; ; 074097.6: "
"	Rgpi geqtc p"	67.85"	o 5"	9; 7022"	: 5055.55"	4270487"	/"	870 ; 5073.46"
60'	F kpf lpi 'Uj gcty cm'	"	"	"	"	"	"	"
"	Dgnkŋkpi "	394.: : "	o 4"	/"	/"	/"	59: 0 22"	8706: 80 66.22"
"	Vwrcpi cp"	4739.35"	mī "	/"	/"	/"	360; : "	5806; 506; 3.55"
"	Rgpi geqtc p"	43.83"	o 5"	9; 7022"	: 5055.55"	4270487"	/"	53042807; ; 95"
70'	Mqŋqo 'Rtcnki"	"	"	"	"	"	"	"
"	Dgnkŋkpi "	7; .42"	o 4"	/"	/"	/"	45: 08; 2"	360220 6: .22"
"	Vwrcpi cp"	: 69.33"	mī "	/"	/"	/"	360; : "	3404: 3087.; : "

P q"	P co c'Rngntlccp"	Xqrŋ'	Ucvŋ'	J cti c"				
				Dcj cp"*Tr +"	Crcv"*Tr +"	Rngntlc"*Tr +"	J cti c'Ucwcp"*Tr +"	Vqwni"*Tr +"
"	Rgpi geqtcq"	6.66"	o 5"	/"	/"	/"	3Ō75Ō65; .37"	7Ō43ŌŌ8; .: 5"
8ŋ'	Rrcv'ukt r'hcugf g'"	"	"	"	"	"	"	"
"	Dgnkukpi "	349.29"	o 4"	/"	/"	/"	59: 0 22"	6: Ō540 75.55"
"	Vwrcpi cp"	3: 3: .4"	ni "	/"	/"	/"	36Ō6; : "	48Ō82Ō89; .8; "
"	Rgpi geqtcq"	; .75"	o 5"	9; 7Ō22"	: 5Ō555.55"	427Ō487"	/"	35Ō84Ō29: .62"
9ŋ'	Dcrqni'Ncvckf cp'tkpi "	"	"	"	"	"	"	"
	Ukt r'3442"							
"	Dgnkukpi "	74.89"	o 4"	/"	/"	/"	45: Ō; 2"	34Ō766Ō895.55"
"	Vwrcpi cp"	975.84"	ni "	/"	/"	/"	36Ō6; : "	32Ō 47Ō ; 2.23"
"	Rgpi geqtcq"	5.; 7"	o 5"	/"	/"	/"	3Ō75Ō65; .37"	6Ō78Ō2: 6.87"
Z kkk	RGMGTlCCP "VCP I I C"DCIC"							
3ŋ'	Rngntlccp'Dclc"	: 76.5; "	ni "	/"	/"	/"	59Ō632"	53Ō 84Ō4; .; "
"	Cpi mŋ'DcwŋŌ'38"	36"	dj "	57Ō22"	/"	/"	/"	6; 2Ō22.22"
"	Tcktkpi "cpi i c"	33.77"	o "	3Ō22Ō22"	/"	/"	/"	34Ō27Ō22.22"
4ŋ'	Rgpi gecvcp"	75.46"	o 4"	/"	/"	/"	54Ō 22"	3Ō68Ō94.22"
Z kkk	RGMGTlCCP "DGVQP "CVCR"							
3ŋ'	Dcrqm'Dcrqni'Mqpuqni'	"	"	"	"	"	"	"
	f cp'Dcrqni'Uj gcty cmi'							
"	Dgnkukpi "	74; .5; "	o 4"	/"	/"	/"	5; : Ō22"	327Ō6; Ō; : .7; "
"	Vwrcpi cp"	34227.; "	ni "	/"	/"	/"	36Ō6; : "	396Ō2830 ; : .; 3"
"	Rgpi geqtcq"	89.33"	o 5"	9; 7Ō22"	: 5Ō555.55"	427Ō487"	/"	; 8Ō 34Ō: 2.84"

P q"	P co c"Rngtllccp"	Xqrl'	Ucv0'	J cti c"				
				Dcj cp"*Tr +"	Crcv"*Tr +"	Rngtllc"*Tr +"	J cti c"Ucwcpc"*Tr +"	Vqvcn"*Tr +"
40'	RrcvF'gn'vgdcn'34"eo "	"	"	"	"	"	"	"
"	Dgnkukpi "	625.62"	o 4"	/"	/"	/"	59: 0 22"	980626082.5: "
"	Vwrcpi cp"	7887.: 3"	mi "	/"	/"	/"	3606; : "	: 40640 2904; "
"	Rgpi geqtcpcp"	6: .63"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	8; 0 290 ; 4.69"
50'	Rrcv'Ngwgn'f cp" Nkuv rcnldgvcpc'vgdcn'32" eo "	"	"	"	"	"	"	"
"	Dgnkukpi "	585.37"	o 4"	/"	/"	/"	59: 0 22"	8: 0: 20832.22"
"	Vwrcpi cp"	4: 6; .7; "	mi "	/"	/"	/"	3606; : "	6306350695.8; "
"	Rgpi geqtcpcp"	3: .3; "	o 5"	9; 7022"	: 50555.55"	4270487"	/"	4804890 29.78"
60'	Mqrqo 'Rtcnkuk'34B4." Dcrqni'Ncvck'34B7."f cp" Tlpi 'I cy gn'34B7"	"	"	"	"	"	"	"
"	Dgnkukpi "	74.89"	o 4"	/"	/"	/"	45: 08; 2"	4407: 20634.22"
"	Vwrcpi cp"	975.84"	mi "	/"	/"	/"	3606; : "	5; 0550786.25"
"	Rgpi geqtcpcp"	5.; 7"	o 5"	/"	/"	/"	30875065; .37"	3806230 26.95"
70'	Rrcv'Vwrcpi 'vgdcn'34" eo "	"	"	"	"	"	"	"
"	Dgnkukpi "	427.38"	o 4"	/"	/"	/"	59: 0 22"	5: 0 790234.54"
"	Vwrcpi cp"	559: .75"	mi "	/"	/"	/"	3606; : "	6: 0 : 30 2; .89"
"	Rgpi geqtcpcp"	46.84"	o 5"	9; 7022"	: 50555.55"	4270487"	/"	57075045; .48"

P q"	P co c'Rngntlccp"	Xqrf'	Ucv0'	J cti c"				
				Dcj cp"*Tr +"	Crv/*Tr +"	Rngtlc"*Tr +"	J cti c'Ucwcp"*Tr +"	Vqcn/*Tr +"
80'	Rrcv'f gmiNkx'vgden' 34eo "	"	"	"	"	"	"	"
"	Dgnkulpi "	34.; 4"	o 4"	/"	/"	/"	59: 0 22"	4066803: 0 3"
"	Vwrcpi cp"	434.92"	mi "	/"	/"	/"	360; ; "	502: 5073.64"
"	Rgpi geqtcq"	3.77"	o 5"	9; 7022"	: 5055.55"	4270487"	/"	4045: 045.57"
"	"	"	"	"	"	"	"	"
ZX"	RGMGTLCPP"TCP I MC"DCIC"							
30'	Rngntlccp"Dclc"	354; 7.6"	mi "	/"	/"	/"	590632.22"	4260636047.82"
40'	Cpi mwt'dcwJ VD" Ó3; "	: 2"	dj "	57022"	/"	/"	/"	40 22022.22"
50'	Dcw'O wt'Ó"3; "	42: "	dj "	34222"	/"	/"	/"	406; 8022.22"
60'	Dcw'O wt'Ó"34"	; 82"	dj "	34222"	/"	/"	/"	330742022.22"
70'	Lctwo 'Mgtcu'Ó"3; "	4: "	dj "	87022"	/"	/"	/"	30 42022.22"
VqcnDlc{ c"								350 32058029.4: "

"

"

"

õJ cno cp'p'k'gpi clc'f k'p'gpi ncpö

MGVGTCPi CP'FICI TCO'CQC			
Wtclcp'Rngtlccp	kegiatan	Tergantung pada	DURASI
RGMGTLCCP'RG'UICRCP			
Rgn dgrulj cp'Nrcpi cp	A	-	3
Rgo cucpi cp'Dgy r ncpm	B	-	1
Rgo ci ctcp'Mgkldpi	C	-	2
F'ltgnuk'Mggv	E	C	4
NCPVCKS			
RGMGTLCCP'VCP'CI			
	F	D	9
I ckecp'Vepci 'wpmwRupf cuk'Ragt 'Uuqjh			
Wtwi 'r cul'vgdci32'bo	K	G	2
Wtwi 'Vepci 'Mgo dck	I	K	15
Wtwi 'UtwDey cj 'Ncpck'vgdgrf64'bo	J	K	5
Dvepi 'Vepci T ckecp'ngnct'Ngnuk'Rq'g	H	F	9
RGMGTLCCP'ROPFCUK			
Rgo cpeeci cp	D	A,B	16
Rgeej 'ngr cnc'r cpeeci	G	D	10
Rupf cuk'Ucw'ntk'Ruy gr'j quug	N	D	1
Vgu'RF'C	O	D	1
Rapi gdtcp'Ô52'bo 'N?8o	L	A,B	6
RGMGTLCCP'DGVQP			
Ncpck'ngtlc'vgdci7'bo	M	I	1
Ragt 'R3'R4'R5'R6'R7'R8'R9'R' R:			
Rgo dgulcp	P	M	8
Dgnkolpi	Q	P	8
Rapi geqtcp	R	Q	6
Uuqhl'			
Rgo dgulcp	S	M	5
Dgnkolpi	T	S	5
Rapi geqtcp	X	T	3
Mqno 'Tcp'Dgvp'Hco g'r'lpw'wco c			
Rgo dgulcp	Y	X	3
Dgnkolpi	V	Y	9
Rapi geqtcp	Z	V	3
F'lpf'ipi 'Eqtg'Tcp'uj gcty cni'vgdci47'bo			
Rgo dgulcp	AA	P	2
Dgnkolpi	AB	AA	8
Rapi geqtcp	AC	AB	2
Dcnqnl'j gcty cni47'f2			
Rgo dgulcp	AD	Y	1
Dgnkolpi	AE	AD	1
Rapi geqtcp	AG	AE	1
Mqno 'Rcmlu'34z34'bo 'Tcp'Dcnqnl'Ncck' 34B7'M447+			
Rgo dgulcp	AF	AD	1
Dgnkolpi	AM	AF	3
Rapi geqtcp	AQ	AM	1
Dgvp'Dgtwrcpi 'Ncpck			
Rgo dgulcp	U	J	4
Rapi geqtcp	W	U	4
RucVDgvp'Tco r 'vgdci32'bo	AH	Z	1
RGMGTLCCP'VCPI I C'DGVQP			
Vcpi i c'C			
Rgo dgulcp	AJ	R	1
Dgnkolpi	AN	AJ	2
Rapi geqtcp	AR	AN	1
Vcpi i c'D			
Rgo dgulcp	AK	R	1
Dgnkolpi	AO	AK	2
Rapi geqtcp	AS	AO	1
Vcpi i c'E			
Rgo dgulcp	AL	R	1
Dgnkolpi	AP	AL	2
Rapi geqtcp	AT	AP	1

Wtclcp'Rngtlccp	kegiatan	Tergantung pada	DURASI
NCPVCKS			
RGMGTLCCP'DGVQP			
Dcnqnl'cp'Dcnqnl'uj gcty cm			
Rgo dgulcp	AI	Z	9
Dgnkolpi	AW	AI	15
Rapi geqtcp	AX	AW	5
RucV' gni'vgdci34'bo			
Rgo dgulcp	AV	Z	5
Dgnkolpi	BA	AV	13
Rapi geqtcp	BB	BA	4
Mqno 'Tcp'Mqno 'Uj gcty cm			
Rgo dgulcp	AZ	BB	3
Dgnkolpi	BI	AZ	6
Rapi geqtcp	BJ	BI	2
Dcnqnl'Mpupqnl'Mcpqr kT cp'Dcnqnl'Cpcnl' Mcpqr k			
Rgo dgulcp	AU	AI	1
Dgnkolpi	BF	AU	2
Rapi geqtcp	BO	BF	1
RucV' gni'ncpqr k'vgdci32'bo			
Rgo dgulcp	AY	AV	1
Dgnkolpi	BG	AY	2
Rapi geqtcp	BP	BG	1
F'lpf'ipi 'Uj gcty cni'vgdci47'bo			
Rgo dgulcp	BH	BB	1
Dgnkolpi	BR	BH	6
Rapi geqtcp	BT	BR	2
Mqno 'Rcmlu'34B4'Tcp'Dcnqnl'Ncck' 34B7'M447+			
Rgo dgulcp	BK	BB	1
Dgnkolpi	BU	BK	5
Rapi geqtcp	BY	BU	1
RGMGTLCCP'VCPI I C'DGVQP			
Vcpi i c'C			
Rgo dgulcp	BC	AX	1
Dgnkolpi	BL	BC	2
Rapi geqtcp	BV	BL	1
Vcpi i c'D			
Rgo dgulcp	BD	BC	1
Dgnkolpi	BM	BD	1
Rapi geqtcp	BW	BM	1
Vcpi i c'E			
Rgo dgulcp	BE	BC	1
Dgnkolpi	BN	BE	1
Rapi geqtcp	BX	BN	1

Wklep'Rmgtlccp	kegiatan	Tergantung pada	DURASI
NCPVCK5			
RGMGTLCCP'DGVQP			
Denqnil'cp'Denqnil'J gcty cm			
Rgo dgulcp	BZ	BJ,BT	9
Dgnkulpi	CC	BZ	15
Rapi geqtcp	CG	CC	5
Rucv'f'gn'vdcn'34'eo			
Rgo dgulcp	CA	BJ,BT	5
Dgnkulpi	CD	CA	14
Rapi geqtcp	CI	CD	4
Mqno 'T'cp'Mqno 'Uj gcty cm			
Rgo dgulcp	CL	CI,CG	3
Dgnkulpi	CP	CL	6
Rapi geqtcp	CV	CP	2
F'lp'l'pi 'Uj gcty cm'vdcn'47'eo			
Rgo dgulcp	CM	CI,CG	1
Dgnkulpi	CQ	CM	6
Rapi geqtcp	CW	CQ	2
Mqno 'R'cmku'34 B4'M'447+			
Rgo dgulcp	CN	CI,CG	1
Dgnkulpi	CR	CN	3
Rapi geqtcp	CX	CR	1
Rucv'ukle 'lcucf'g'32'67'T'cp'37'68			
Rgo dgulcp	CE	CA	1
Dgnkulpi	CJ	CE	2
Rapi geqtcp	CK	CJ	1
Denqnil'evck- 'l'pi 'ukle '34 H2			
Rgo dgulcp	CB	BZ	1
Dgnkulpi	CF	CB	1
Rapi geqtcp	CG	CF	1
RGMGTLCCP'VCP1 I C'DGVQP			
Vcpi i c'C			
Rgo dgulcp	CO	CG	1
Dgnkulpi	CS	CO	2
Rapi geqtcp	CY	CS	1
Vcpi i c'D			
Rgo dgulcp	CT	CO	1
Dgnkulpi	CZ	CT	1
Rapi geqtcp	DB	CZ	1
Vcpi i c'E			
Rgo dgulcp	CU	CO	1
Dgnkulpi	DA	CU	1
Rapi geqtcp	DC	DA	1

Wklep'Rmgtlccp	kegiatan	Tergantung pada	DURASI
NCPVCK6			
RGMGTLCCP'DGVQP			
Denqnil'cp'Denqnil'J gcty cm			
Rgo dgulcp	DD	CV,CW	9
Dgnkulpi	DG	DD	15
Rapi geqtcp	DL	DG	5
Rucv'f'gn'vdcn'34'eo			
Rgo dgulcp	DE	CV,CW	5
Dgnkulpi	DH	DE	14
Rapi geqtcp	DM	DH	4
Mqno 'T'cp'Mqno 'Uj gcty cm			
Rgo dgulcp	DP	DL,DM	3
Dgnkulpi	DT	DP	6
Rapi geqtcp	DY	DT	2
F'lp'l'pi 'Uj gcty cm'vdcn'47'eo			
Rgo dgulcp	DQ	DL,DM	1
Dgnkulpi	DU	DQ	6
Rapi geqtcp	DZ	DU	2
Mqno 'R'cmku'34 B4'M'447+			
Rgo dgulcp	DR	DL,DM	1
Dgnkulpi	DV	DR	3
Rapi geqtcp	EA	DV	1
Rucv'ukle 'lcucf'g'32'67'T'cp'37'68			
Rgo dgulcp	DI	DE	1
Dgnkulpi	DN	DI	2
Rapi geqtcp	DO	DN	1
Denqnil'evck- 'l'pi 'ukle '34 H2'M'447+			
Rgo dgulcp	DF	DD	1
Dgnkulpi	DJ	DF	1
Rapi geqtcp	DK	DJ	1
RGMGTLCCP'VCP1 I C'DGVQP			
Vcpi i c'C			
Rgo dgulcp	DS	DL	1
Dgnkulpi	DW	DS	2
Rapi geqtcp	EB	DW	1
Vcpi i c'D			
Rgo dgulcp	DX	DS	1
Dgnkulpi	EC	DX	1
Rapi geqtcp	ED	EC	1

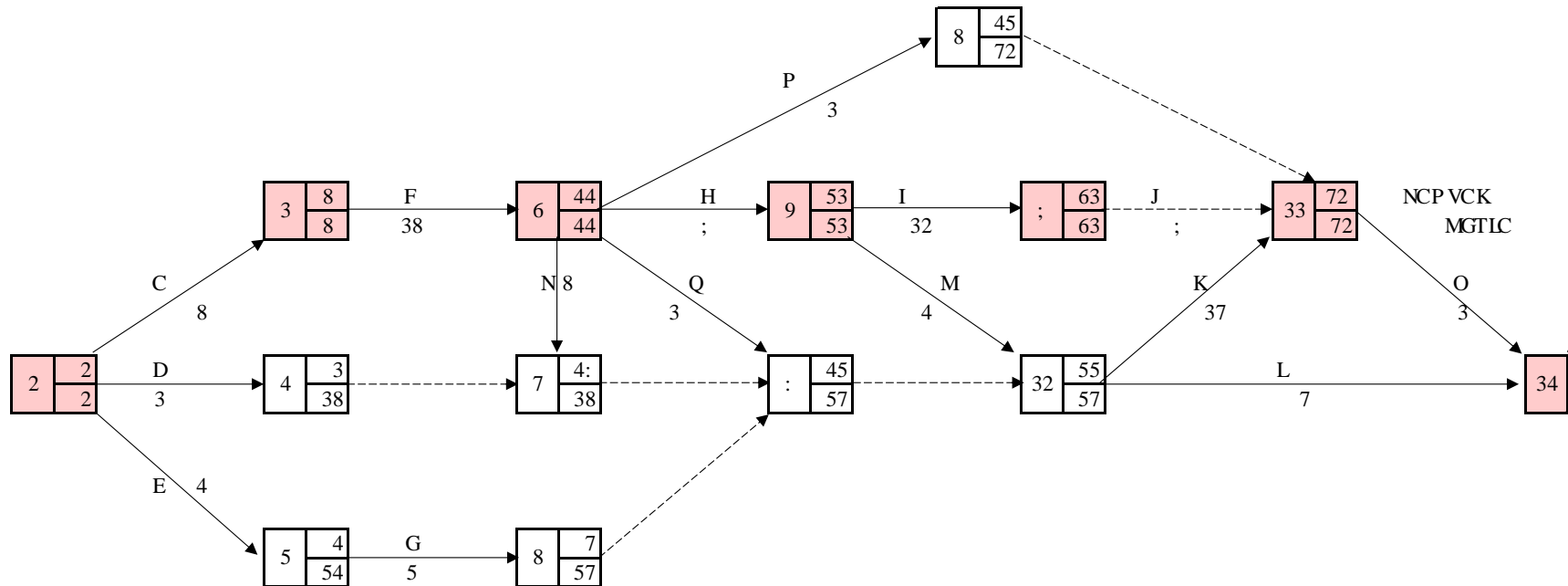
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NCPVCK7			
RGMGTLCCP'DGVQP			
Dcnqnl'cp'Dcnqnl'j gcty cm			
Rgo dgulcp	EE	DY,DZ	9
Dgnkulpi	EH	EE	15
Rgpi geqtcp	EM	EH	5
RucvT'gnl'gdcrl34'eo			
Rgo dgulcp	EF	DY,DZ	5
Dgnkulpi	EI	EF	14
Rgpi geqtcp	EN	EI	4
Mqno 'T'cp'Mqno 'U'j gcty cm			
Rgo dgulcp	EQ	EM,EN	3
Dgnkulpi	EU	EQ	6
Rgpi geqtcp	EY	EU	2
F'lpf'lpf 'U'j gcty cm'gdcrl47'eo			
Rgo dgulcp	ER	EM,EN	1
Dgnkulpi	EV	ER	6
Rgpi geqtcp	EZ	EV	2
Mqno 'Rcmku'34 B4'M447+			
Rgo dgulcp	ES	EM,EN	1
Dgnkulpi	EW	ES	2
Rgpi geqtcp	FA	EW	1
Rucv'ukle 'lcucf g'32 i67 T'cp'37 i68			
Rgo dgulcp	EJ	EF	1
Dgnkulpi	EO	EF	3
Rgpi geqtcp	EP	EO	1
Dcnqnl'evck: 'lpi 'ukle '34 B2'M447+			
Rgo dgulcp	EG	EE	1
Dgnkulpi	EK	EG	1
Rgpi geqtcp	EL	EK	1
RGMGTLCCP'VCPI I C'DCLC			
Rngtlccp'Dcle"<	ET	EM,EN	2
Rgpi gec'cp"<	EX	ET	6

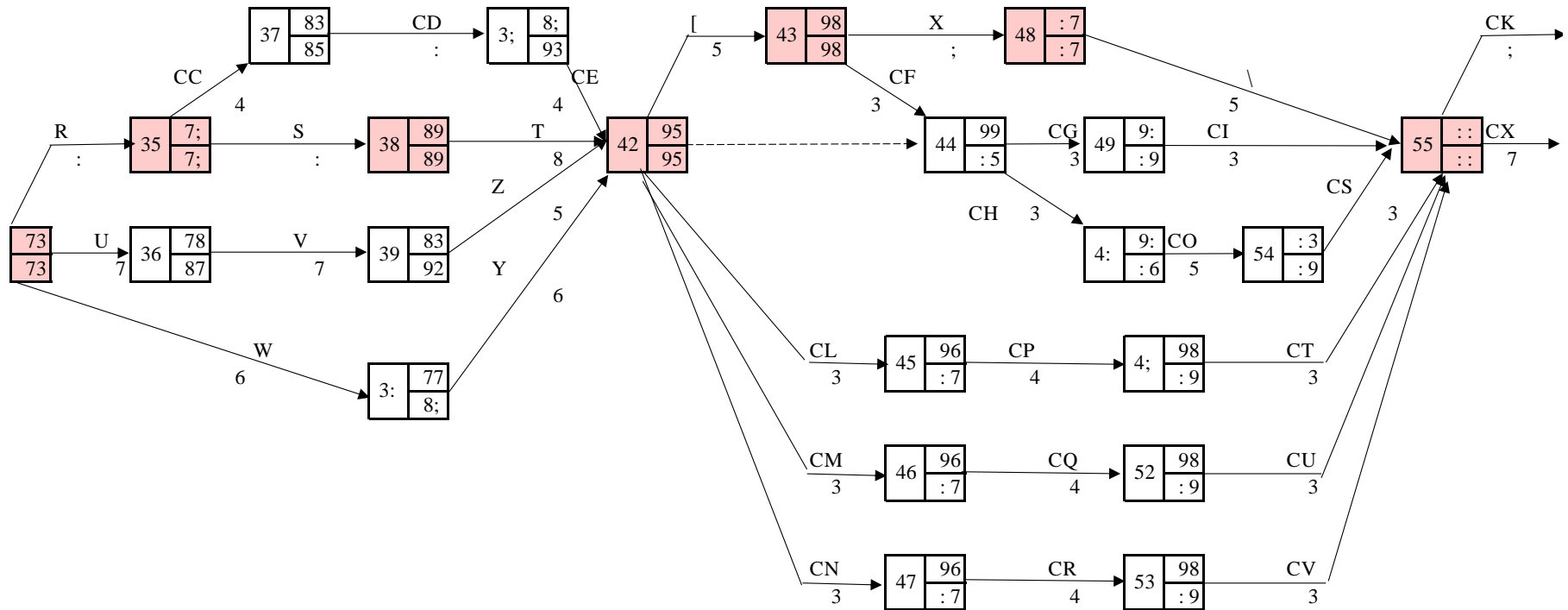
Wtckcp'Rngtlccp	kegiatan	Tergantung pada	DURASI
NCPVCKVCVR			
RGMGTLCCP'DGVQP			
Dcnqm'Dcnqm'Mpqu'rl'cp'Dcnqnl'j gcty cm			
Rgo dgulcp	FB	EY,EZ	5
Dgnkulpi	FE	FB	9
Rgpi geqtcp	FJ	FE	3
RucvT'gnl'gdcrl34'eo "f'qwdng'wrcpi cp+			
Rgo dgulcp	FC	EY,EZ	3
Dgnkulpi	FF	FC	7
Rgpi geqtcp	FK	FF	2
Rucv'Ngw'grlf'cp'Nlur'ncpi 'dgqcp'gdcrl32" eo			
Rgo dgulcp	FP	FJ,FK	2
Dgnkulpi	FR	FP	4
Rgpi geqtcp	FT	FR	2
Mqno 'Rcmku'34 B4 'Dcnqm'Nevck'34 B7." T'ipi 'T'gy gfl34 B7'M447+			
Rgo dgulcp	FN	FJ,FK	2
Dgnkulpi	FQ	FN	6
Rgpi geqtcp	FS	FQ	1
Rucv'Vcncpi 'gdcrl34'eo "wrcpi cpT'qwdng+			
Rgo dgulcp	FD	FB	2
Dgnkulpi	FH	FD	4
Rgpi geqtcp	FI	FH	2
RucvT'gnl'hb'gdcrl34'eo "wrcpi cpT'qwdng+			
Rgo dgulcp	FG	FC	1
Dgnkulpi	FL	FG	1
Rgpi geqtcp	FM	FL	1
RGMGTLCCP'T'CP I MC'DCLC			
Rngtlccp'Dcle"<	FO	FK	20

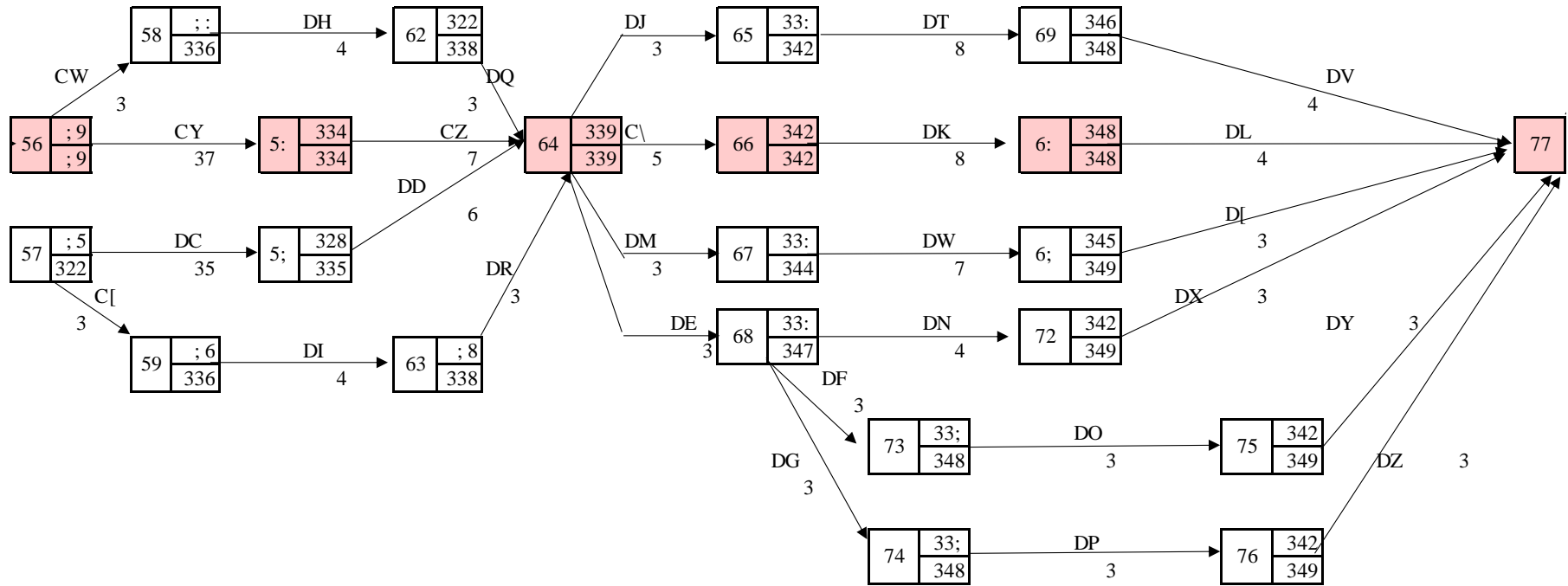


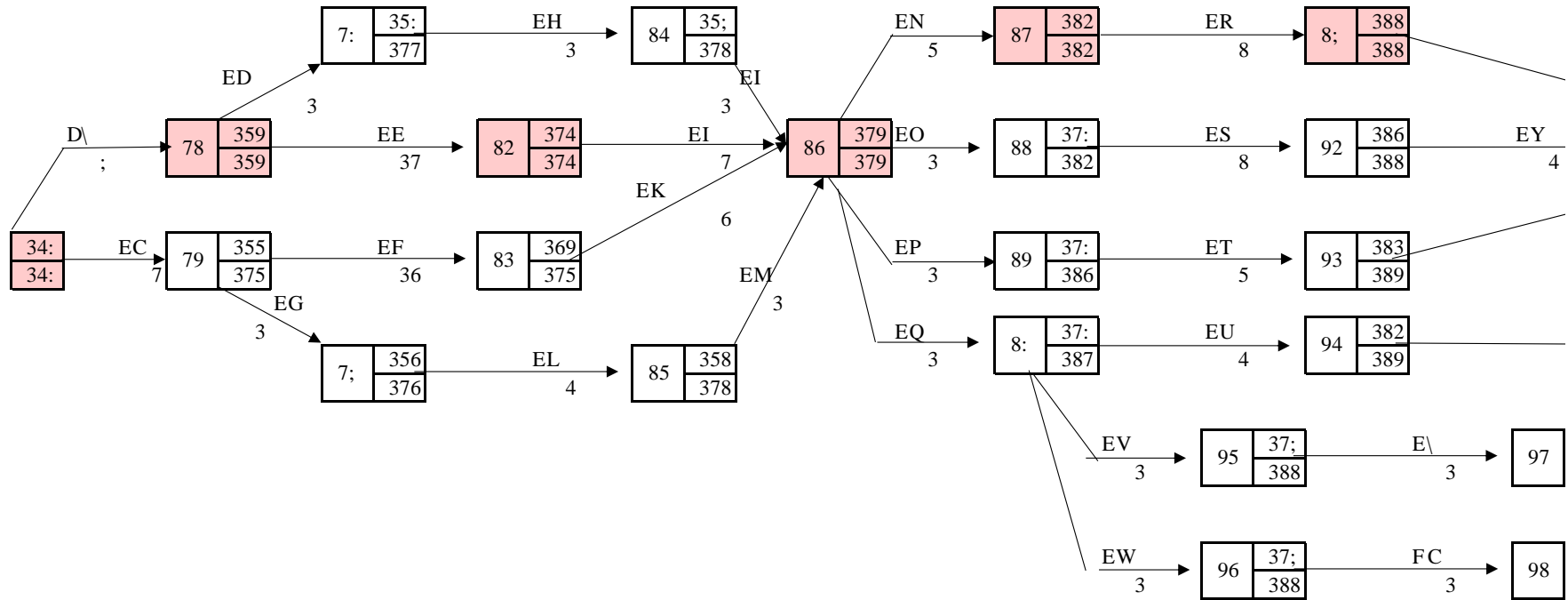
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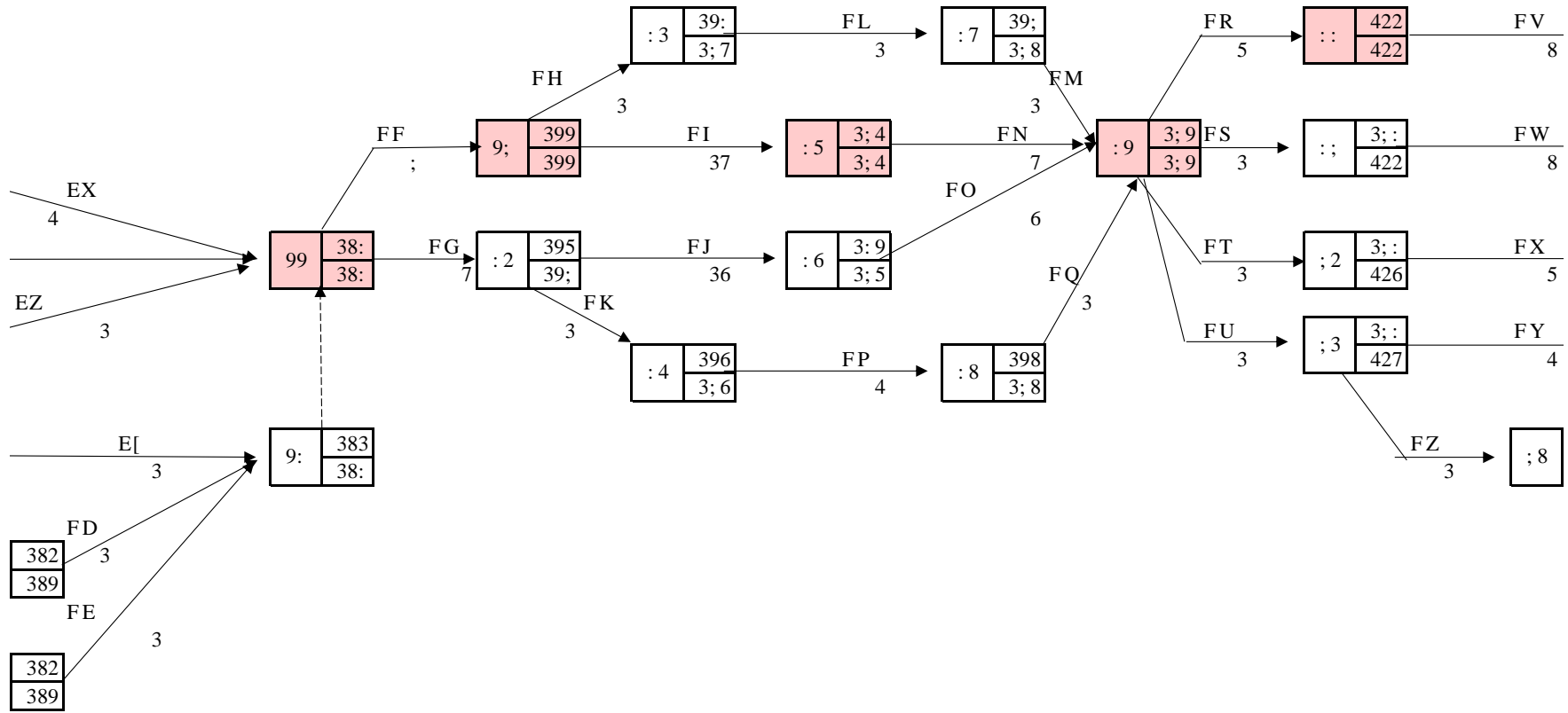
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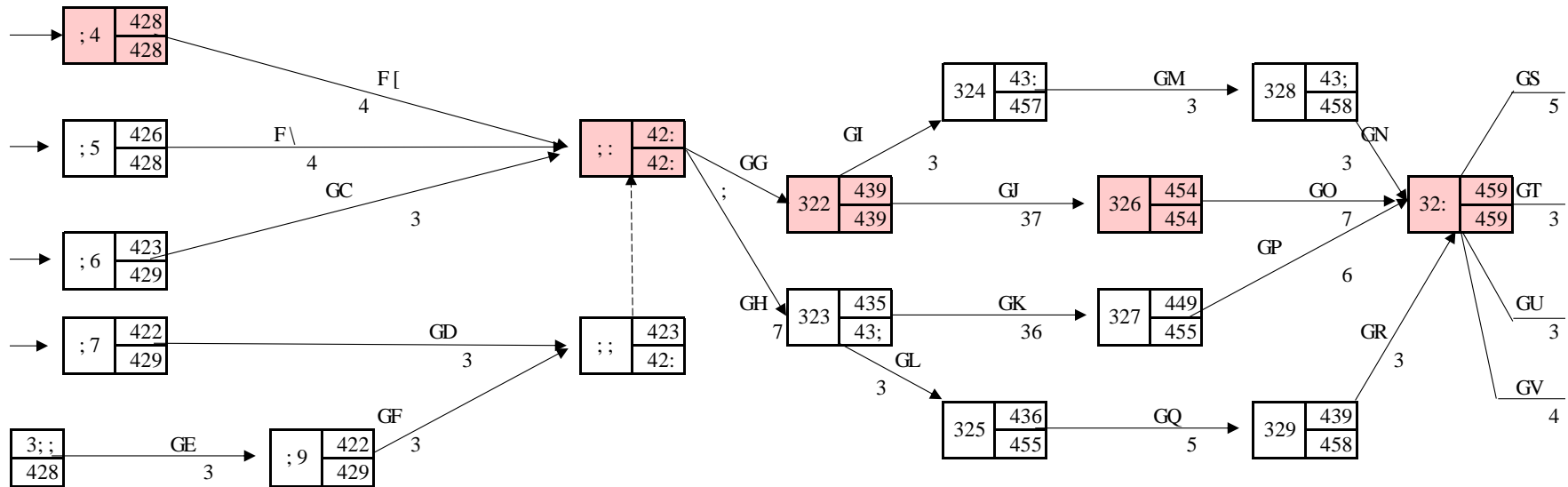


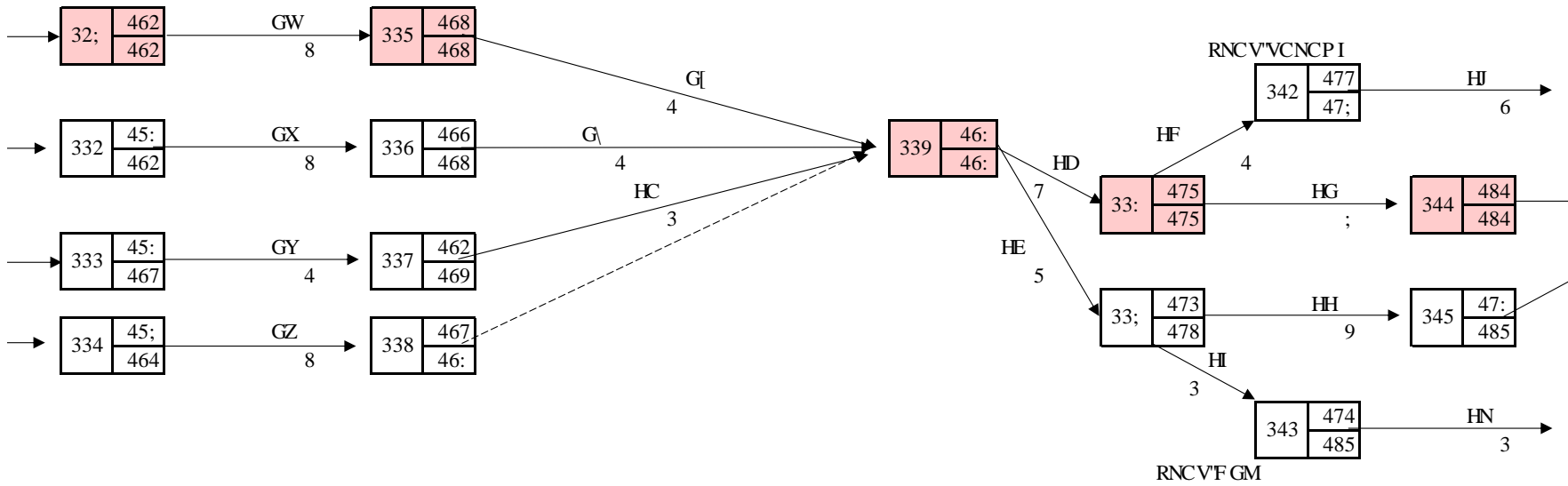


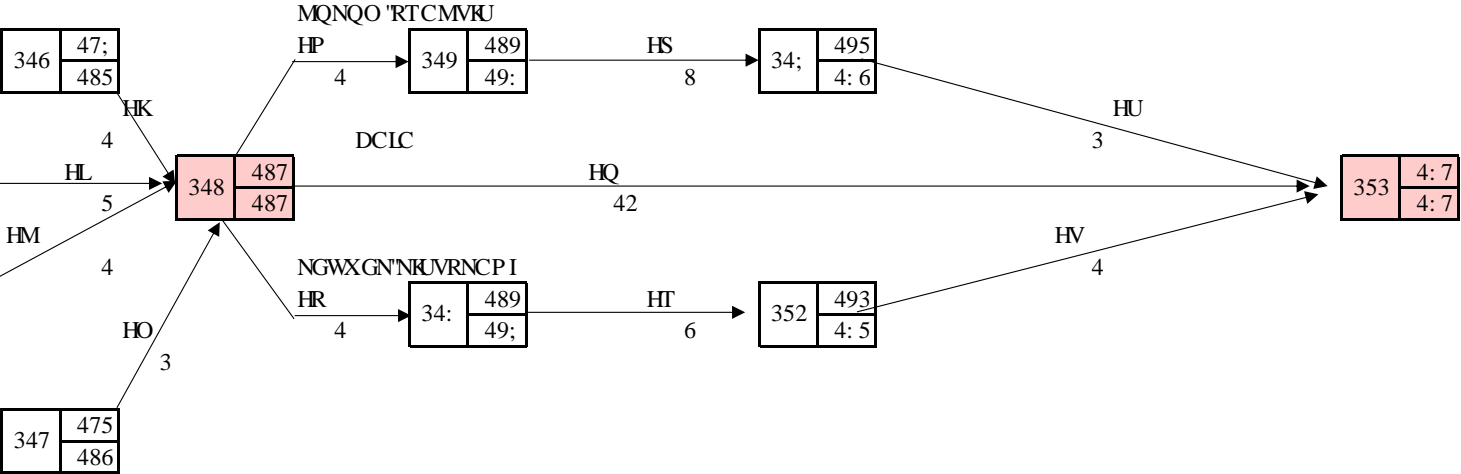


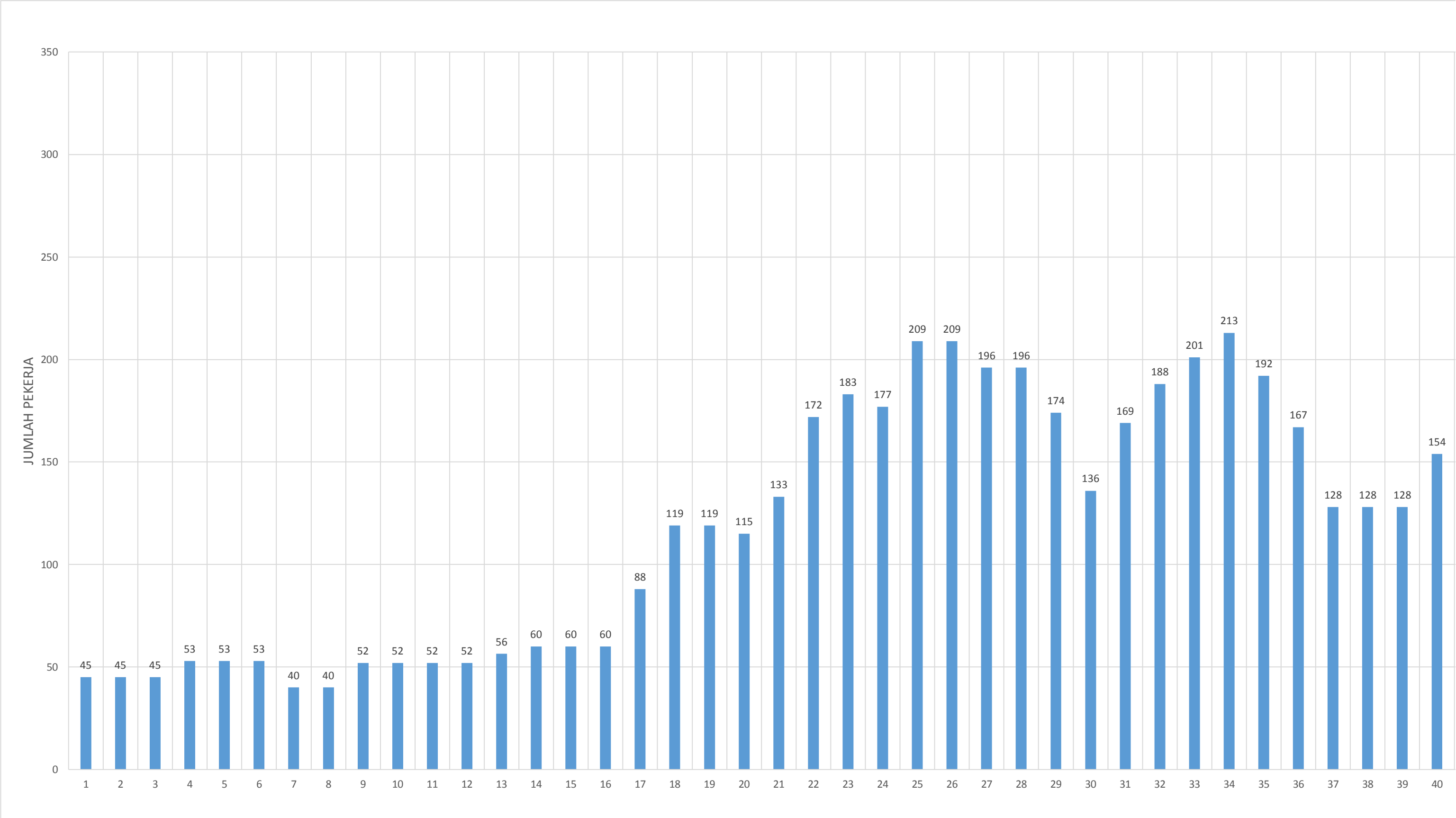




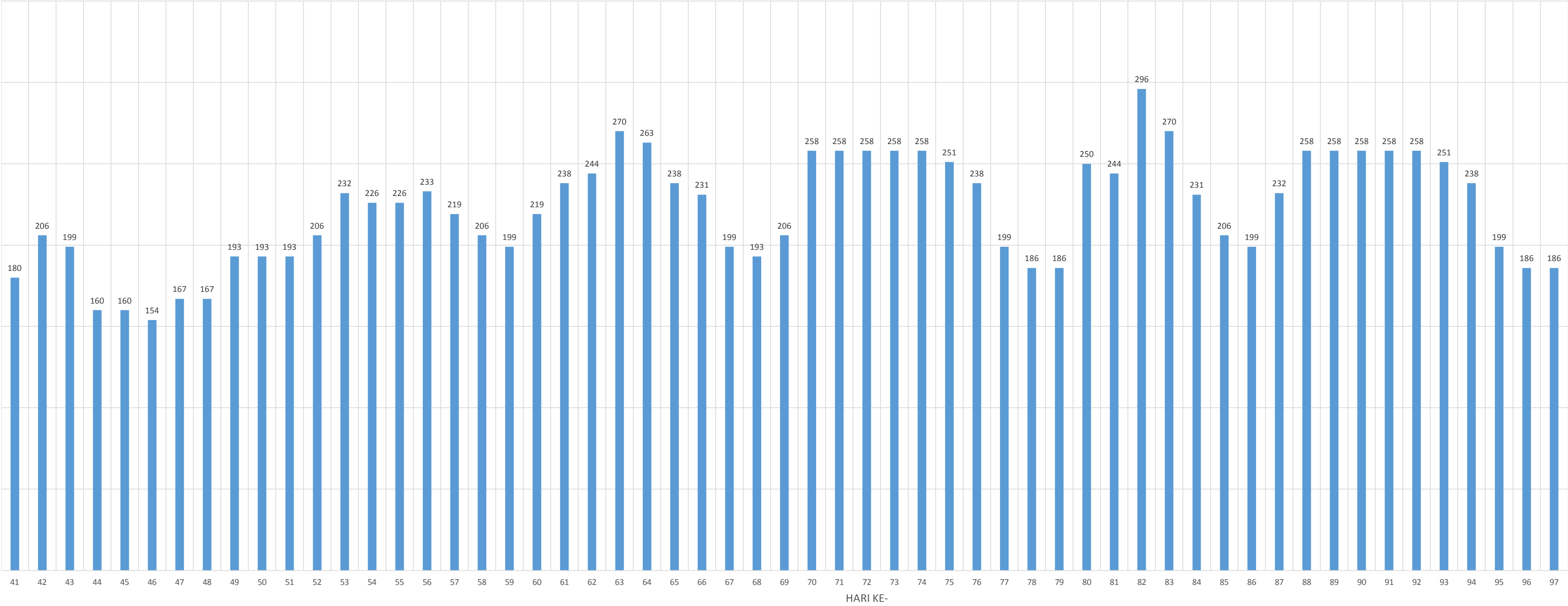


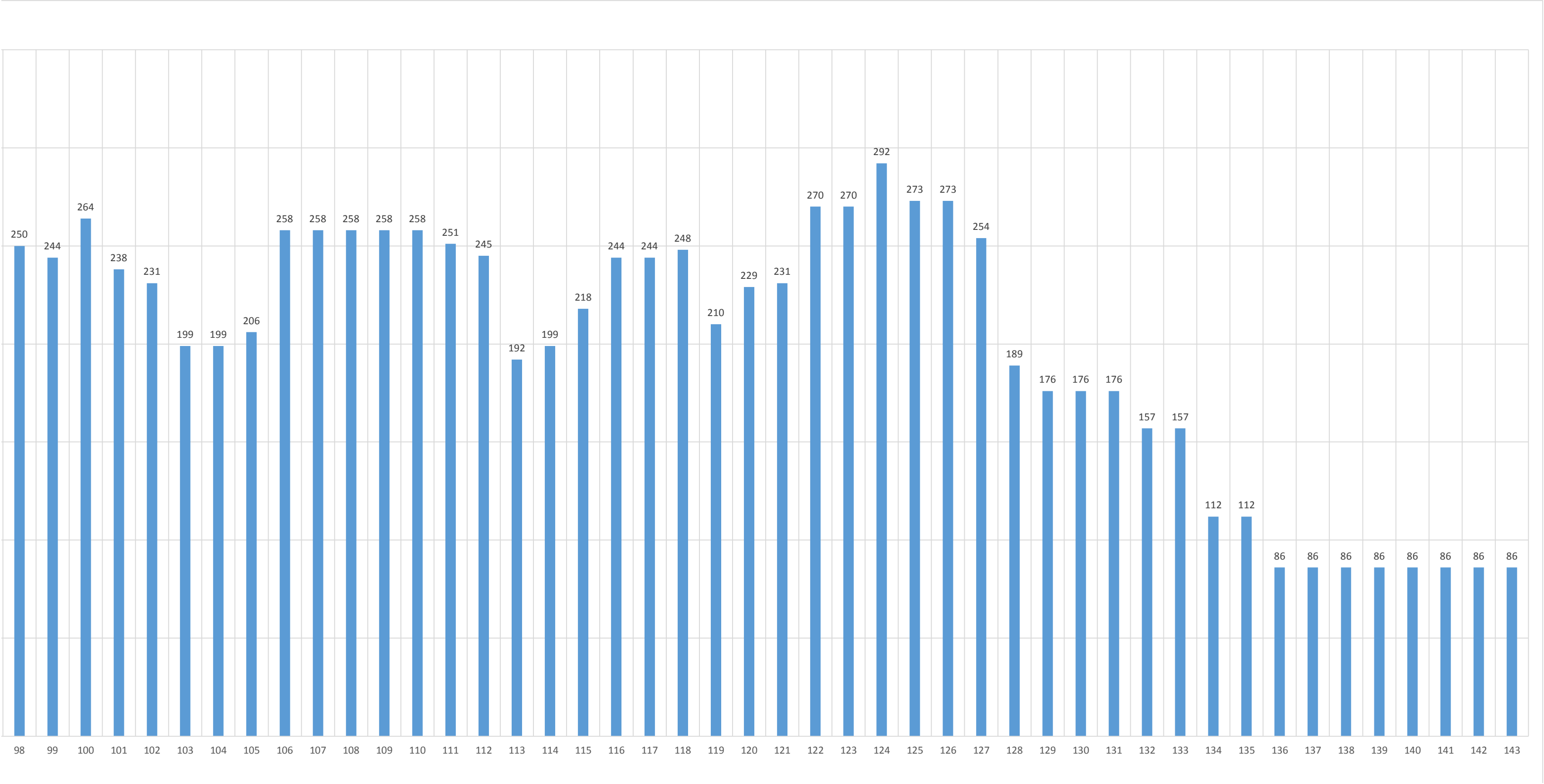






BARChart JADWAL PEKERJA HARIAN





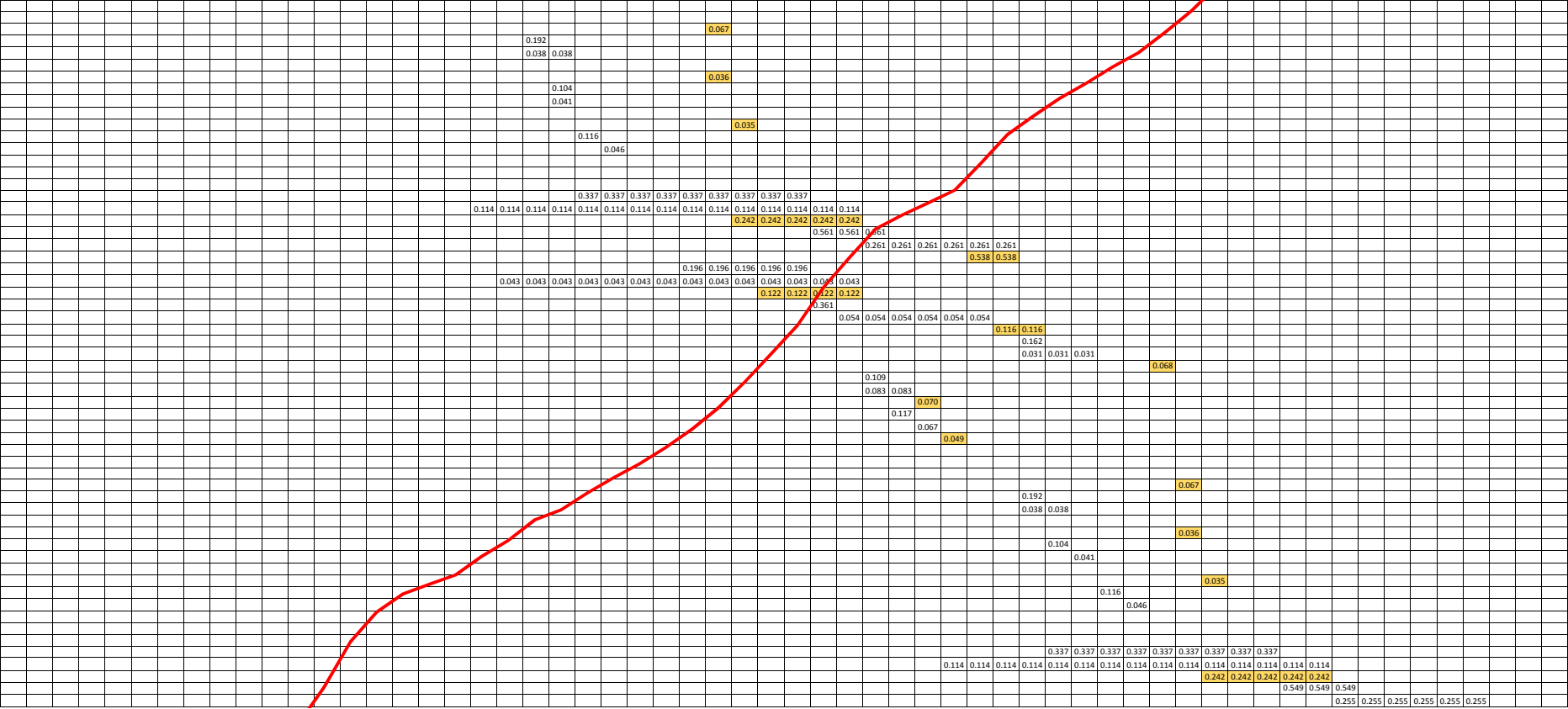
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PEKERJAAN : STRUKTUR
LOKASI : JL. JOHAR NO. 19 - 21, SURABAYA

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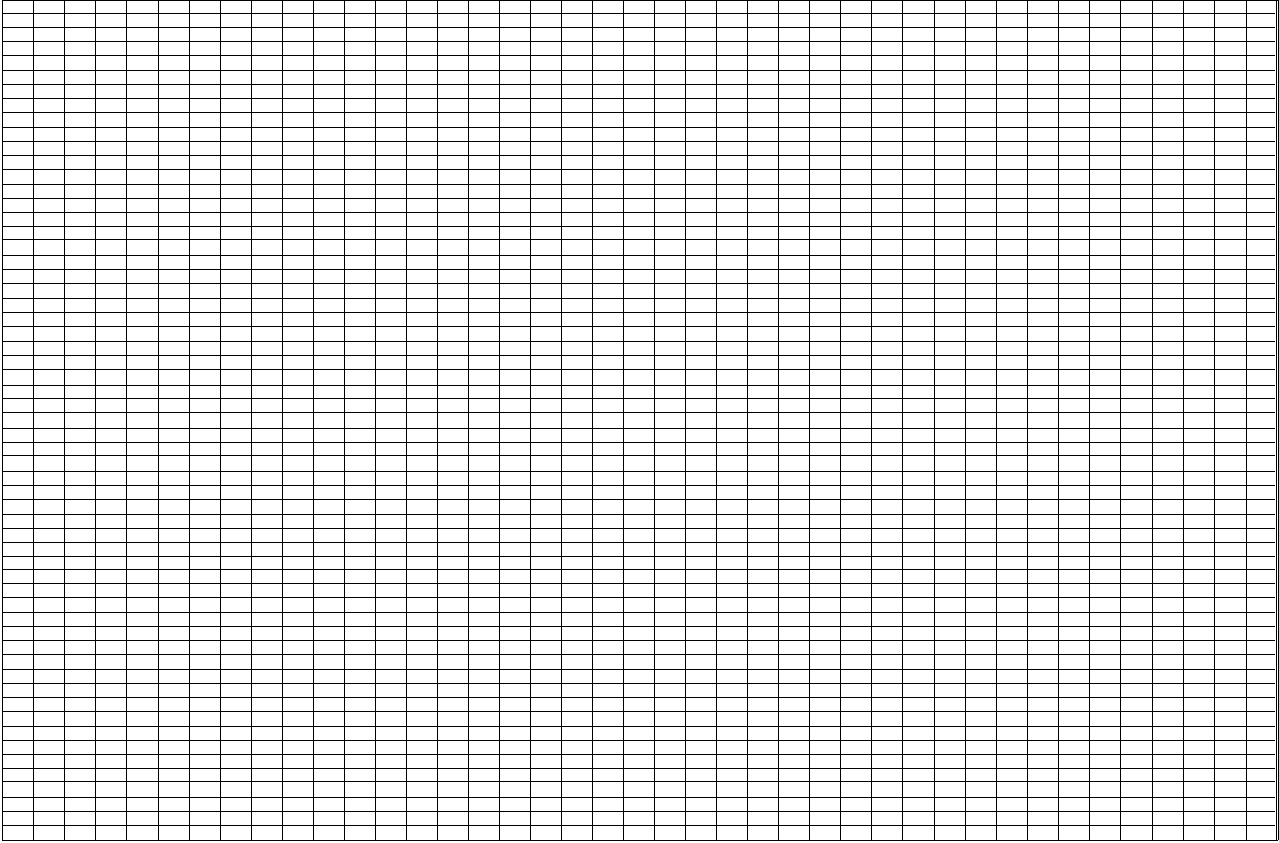
10.6	Pengecoran Kolom dan Kolom Shearwall	45.63	m³	Rp	106,420,192.32	1.052	2																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
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BAB V PENUTUP

5.1 Aspek Perbandingan Biaya dan Waktu

Dalam perbandingan antara RAB HSPK 2015 Surabaya dan RAB kontraktor terdapat beberapa aspek yang membedakan antara lain :

Tabel 5. 1 Aspek Perbandingan Biaya dan Waktu Pekerjaan

No.	Aspek Perbandingan	HSPK 2015	RAB Kontraktor
1.	Dasar perhitungan	HSPK 2015 Surabaya	SNI. 2835-2008 SNI. 2836-2008 SNI. 7394-2008 SNI. 7393-2008
2.	Metode Perhitungan	Analisa HSPK 2015	Analisa Upah, bahan & alat kontraktor
3.	Metode Penjadwalan	<i>Network planning</i> diagram AOA & Kurva S	Kurva S

5.2 Perbandingan Biaya dan Waktu Pekerjaan Struktur dengan HSPK 2015 Surabaya dan RAB Kontraktor

Dari hasil analisa perhitungan pada Bab IV didapat perbedaan dalam beberapa pekerjaan sebagai berikut :

Tabel 5. 2 Perbandingan Biaya Pekerjaan Berdasarkan HSPK 2015 Surabaya dan RAB Kontraktor

No.	Item Pekerjaan	Volume	Sat	Biaya Pekerjaan (Rp)	
				HSPK	RAB Kontraktor
PEKERJAAN PERSIAPAN					
1.	Pembersihan Lapangan	1536,96	m²	24,437,664.00	-
2.	Pemasangan Bouwplank	140	titik	14,418,600.00	-
3.	Pemagaran Keliling	77,57	m'	39,688,186.30	-
4	Direksi Keet	25	m²	40,571,425.00	-

Keterangan : Berdasarkan data diatas, biaya pekerjaan persiapan dengan RAB Kontraktor tidak ada, karena dalam analisa RAB Kontraktor tidak disebutkan biaya pekerjaan persiapan					
PEKERJAAN LANTAI 1					
1.	Galian Tanah	994.02	m ³	36,281,829.40	50,647,096.50
2.	Pemancangan	3,128	m'	2.676.626.770,27	963,976,000,00
3.	Pecah Kepala Pancang	176	buah	11,880,000.00	29,040,000.00
4.	Urug sirtu bawah lantai, t = 42 cm	327.26	m ³	70,645,485.30	53,772,908.75
Keterangan : Berdasarkan data diatas, biaya pemancangan dengan HSPK lebih murah karena pada pemancangan menggunakan analisa HSPK dengan harga sewa alat dan bahan dari survey lapangan.					
PEKERJAAN STRUKTUR LANTAI 1					
5.	Lantai kerja	12.21	m ³	11,989,102.42	9,700,307.76
6.	Pengecoran Poer	150.91	m ³	217.926.049,43	163,867,773.61
7.	Pengecoran Sloof	52.17	m ³	75.337.631,69	56,649,537.80
8.	Pengecoran Kolom	66.91	m ³	96.620.476,54	72,653,005.08
9.	Pengecoran Dinding Shearwall	27.42	m ³	39.596.662,09	29,774,397.67
Keterangan : Berdasarkan data diatas, biaya pekerjaan pengecoran menggunakan analisa cara modern dengan harga sewa alat dan material dari survei lapangan. Hal ini dikarenakan pada analisa HSPK 2015 Surabaya tidak disebutkan harga sewa alat <i>concrete pump</i> .					
10.	Pembesian Poer	19504.999	kg	282,783,482.22	261,547,219.00
11.	Pembesian Sloof	12,239.2	kg	177,443,656.29	164,118,124.82
12.	Pembesian kolom	10200.87	kg	147,892,158.25	136,785,863.16
13.	Pembesian Dinding Shearwall	3,193.88	kg	46,304,895.44	42,827,524.91
Keterangan : Berdasarkan data diatas, biaya pekerjaan pembesian dengan HSPK 2015 Surabaya lebih mahal karena nilai pekerjaan pembesian lebih besar untuk setiap kg tulangan.					
No.	Item Pekerjaan	Volume	Sat	Biaya Pekerjaan (Rp)	
				HSPK	RAB Kontraktor
14.	Bekisting Poer	288.4885	m ²	68.715.076,34	30,424,343.63
15.	Bekisting Sloof	370.88	m ²	66.255.725,36	42,508,253.64
16.	Bekisting Kolom	488.13992	m ²	138.680.551,27	93,564,023.91
17.	Bekisting Dinding Shearwall	219.36	m ²	83,093,568.00	63,439,043.62
Keterangan :Berdasarkan data diatas, biaya pekerjaan bekisting baik dengan HSPK 2015 Surabaya maupun RAB Kontraktor merupakan biaya pekerjaan bekisting dengan asumsi 2x pemakaian.					
18.	Pembesian Tangga A	1,337.37	kg	19,389,196.78	17,243,385.90
19.	Pembesian Balok lt.II	20,977.0	kg	304,124,044.80	281,285,163.92
20.	Pembesian Plat lt. II	11,705.0	kg	169,698,660.57	150,563,843.19
Keterangan : Berdasarkan data diatas, biaya pekerjaan pembesian dengan HSPK lebih mahal karena nilai harga satuan upah dan material di HSPK 2015 Surabaya lebih besar.					

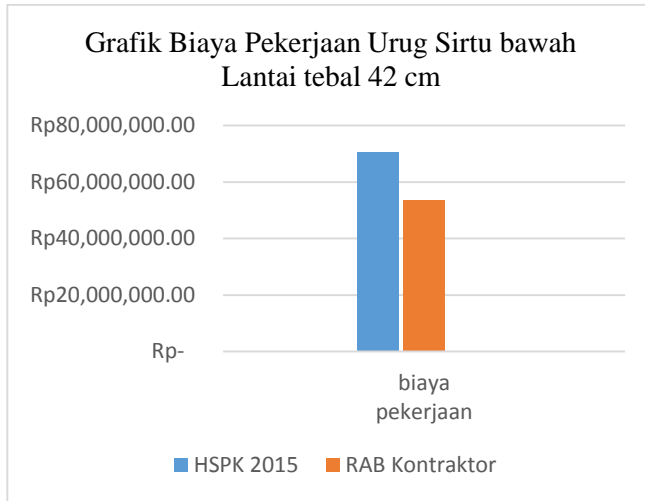
21.	Bekisting Tangga A	44.61	m ²	13.316.861,10	10,917,354.56
22.	Bekisting Balok lt.II	860.63	m ²	256.898.837,07	169,996,114.01
23.	Bekisting Plat lt.II	833.38	m ²	236.764.204,05	203,941,068.25
24.	Pengecoran Tangga A	6.23	m ³	8.996.615,78	6,764,934.26
25.	Pengecoran Balok lt.II	111.91	m ³	161.606.945,81	121,519,067.95
26.	Pengecoran Plat lt.II	100.01	m ³	144.422.398,80	108,597,283.40
Keterangan : Berdasarkan data diatas, biaya pekerjaan bekisting balok dengan HSPK 2015 Surabaya lebih mahal karena nilai harga satuan pekerjaan bekisting balok di HSPK lebih besar. Sedangkan, biaya pengecoran terjadi selisih yang besar karena pada analisa HSPK ditambahkan alat <i>Concrete Pump</i> .					
27.	Pekerjaan Rangka Baja	13,323.4	kg	432.279.341,60	297,836,962.07
Keterangan : Berdasarkan data diatas, biaya pekerjaan rangka baja dengan HSPK 2015 Surabaya lebih mahal karena nilai HSPK untuk pekerjaan rangka baja lebih besar					

Berdasarkan tabel 5.2 diperoleh data sebagai berikut :

1. Pada Pekerjaan pemancangan, terjadi selisih biaya pekerjaan yang cukup besar yakni Rp 1,712,650,770.27,-. Perhitungan biaya pekerjaan pemancangan menggunakan upah pekerja dan material beton K-500 dari HSPK 2015 Surabaya, sedangkan harga sewa alat dan material dari survei harga lapangan.

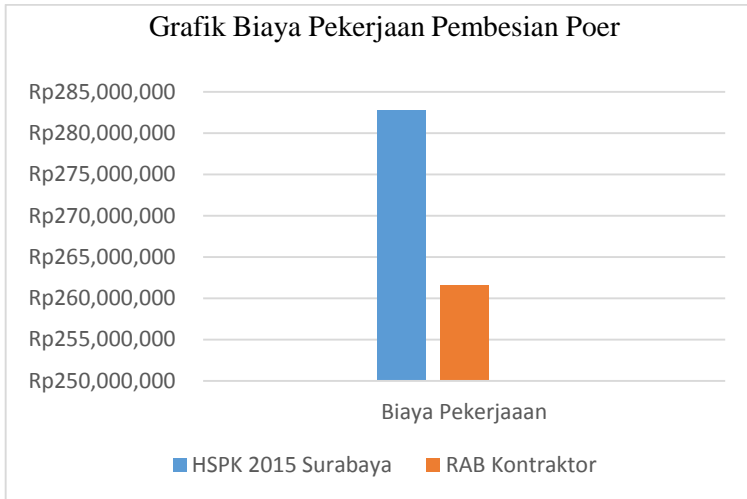


Grafik 5. 1 Biaya pekerjaan pemancangan



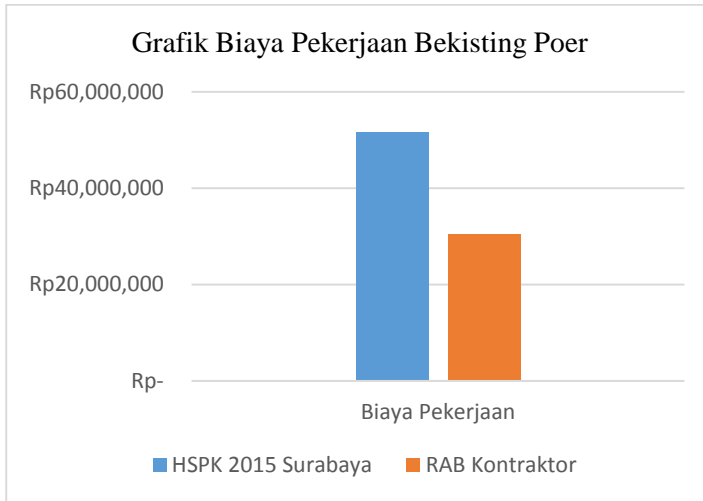
Grafik 5. 2 Biaya pekerjaan urug sirtu bawah lantai tebal 42 cm

2. Berdasarkan grafik 5.2 menunjukkan bahwa terjadi selisih biaya pekerjaan sebesar Rp16,872,576.55,- pada pekerjaan urug sirtu bawah lantai tebal 42 cm. Hal ini dikarenakan pada perhitungan biaya dengan HSPK 2015 Surabaya, biaya pekerjaan urug sirtu bawah lantai tebal 42 cm ini mempunyai nilai HSPK yang lebih besar. Ditambah lagi menggunakan alat *stamper* dengan koefisien 0,008



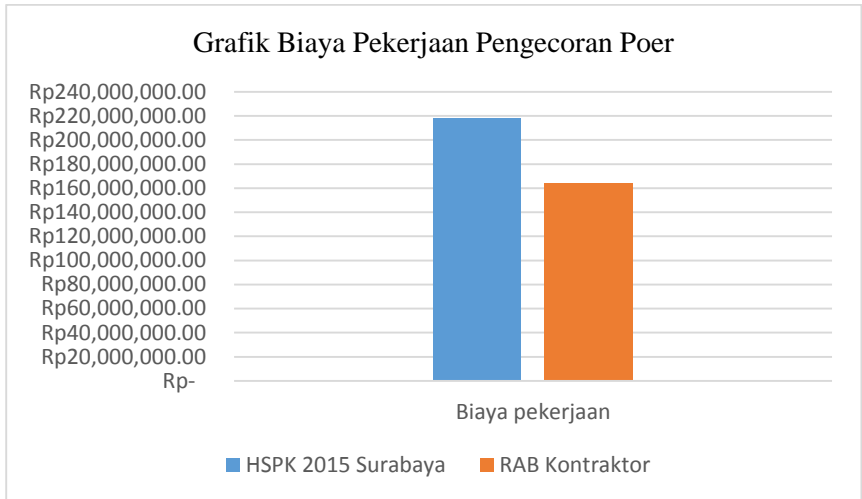
Grafik 5. 3 Biaya pekerjaan pembesian poer

3. Berdasarkan grafik 5.3 menunjukkan bahwa terjadi selisih biaya pekerjaan sebesar Rp 21,236,263.22,- pada pekerjaan pembesian. Hal ini dikarenakan pada perhitungan biaya pekerjaan pembesian dengan HSPK 2015 Surabaya nilai HSPK besi beton polos atau ulir besarnya sama yakni Rp 14.498,-/kg. Sedangkan, pada analisa RAB Kontraktor, harga satuan pekerjaan pembesian besi beton polos sebesar Rp 12.863,24 dan harga satuan pekerjaan besi beton ulir sebesar Rp 13.409,24,-.



Grafik 5. 4 Biaya Pekerjaan Bekisting Poer

4. Berdasarkan grafik 5.4 menunjukkan bahwa terjadi selisih biaya pekerjaan sebesar Rp 21.111.963,- pada pekerjaan bekisting. Hal ini dikarenakan pada perhitungan biaya pekerjaan bekisting dengan HSPK 2015 Surabaya nilai HSPK lebih besar dibandingkan dengan harga satuan dari RAB Kontraktor. Pada perhitungan biaya pekerjaan bekisting, diasumsikan bekisting digunakan sebanyak 2x pemakaian. Sehingga, biaya bekisting di tiap item pekerjaan bekisting yang terkait digunakan 50% dari total biaya bekisting yang dibutuhkan. Karena digunakan 2x, maka pada penggunaan kedua ditambah 25% dari total biaya untuk menanggulangi biaya kerusakan saat pembongkaran.



Grafik 5. 5 Biaya Pekerjaan Pengecoran Poer

5. Berdasarkan grafik 5.5 menunjukkan bahwa terjadi selisih biaya pekerjaan sebesar Rp 54.058.275,- pada pekerjaan pengecoran. Pada perhitungan biaya pekerjaan pengecoran menggunakan HSPK 2015 dengan ditambah harga sewa alat *concrete pump*.
6. Perbandingan biaya total pekerjaan dengan HSPK 2015 Surabaya menggunakan hasil pengurangan antara biaya total pekerjaan dengan biaya pekerjaan persiapan, yakni :
 = Rp 13.810.336.107,- – Rp 119.115.875.30,-
 = Rp 13.691.220.231,-
 dibulatkan menjadi Rp 13.691.221.000,- . Sedangkan, biaya total pekerjaan struktur dengan RAB Kontraktor sebesar Rp 9.854.701.246,73,-.

Tabel 5. 3 Perbandingan Waktu Pekerjaan Berdasarkan HSPK 2015 Surabaya dan RAB Kontraktor

No.	Item pekerjaan	Durasi (hari)	
		HSPK 2015	RAB Kontraktor
	Lantai 1 ($\pm 0,00$)		
1.	Pekerjaan Tanah	24	42
2.	Pekerjaan Pondasi	19	28
3.	Pekerjaan Beton	26	28
4.	Pekerjaan Tangga	9	14
	Lantai 2 ($\pm 4,00$)		
5.	Pekerjaan Beton	26	28
6.	Pekerjaan Tangga	7	14
	Lantai 3 ($\pm 8,00$)		
7.	Pekerjaan Beton	24	28
8.	Pekerjaan Tangga	7	14
	Lantai 4 ($\pm 12,00$)		
9.	Pekerjaan Beton	24	28
10.	Pekerjaan Tangga	5	14
	Lantai 5 ($\pm 16,00$)		
11.	Pekerjaan Beton	22	28
12.	Pekerjaan Tangga Baja	4	14
	Lantai Top Floor ($\pm 20,00$)		
13.	Pekerjaan Beton	16	14
14.	Pekerjaan Rangka Atap & penutup atap	20	35
	TOTAL (setelah overlapping)	143	140

7. Berdasarkan tabel 5.3, durasi pekerjaan dengan HSPK 2015 Surabaya selama 143 hari, dikarenakan dalam perhitungan durasi tersebut juga dicantumkan durasi pekerjaan persiapan proyek (pembersihan lapangan, direksi keet, dsb). Sedangkan, pada RAB kontraktor durasi pekerjaan persiapan tidak dihitung.

5.3 Kesimpulan

Berdasarkan hasil perbandingan biaya dan waktu pekerjaan dengan HSPK 2015 Surabaya dan RAB Kontraktor, maka diperoleh kesimpulan sebagai berikut :

1. Metode pelaksanaan yang digunakan dalam Tugas Akhir ini sama dengan metode pelaksanaan yang digunakan oleh kontraktor, yaitu struktur bawah (pondasi) menggunakan tiang pancang beton K-500, beton ready mix mutu K-300 untuk struktur bagian atas, penjadwalan pekerjaan menggunakan Kurva 'S', serta penyajian *network planning* berupa diagram AOA.
2. Pelaksanaan pekerjaan pembangunan Gedung BPKAD Provinsi Jawa Timur berdasarkan HSPK 2015 Surabaya membutuhkan biaya sebesar Rp 13.691.221.000,- Sedangkan, berdasarkan RAB Kontraktor membutuhkan biaya sebesar Rp 9.854.701.300,-.
3. Waktu Pelaksanaan pekerjaan pembangunan Gedung BPKAD Jawa Timur berdasarkan analisa HSPK 2015 Surabaya dapat diselesaikan selama 140 hari. Sedangkan, berdasarkan RAB Kontraktor pekerjaan pembangunan ini dapat diselesaikan selama 140 hari.
4. Berdasarkan hasil perbandingan biaya dan durasi pekerjaan dengan HSPK 2015 Surabaya dan RAB Kontraktor, biaya total pekerjaan struktur dengan HSPK 2015 Surabaya lebih mahal. Hal ini dikarenakan beberapa harga bahan/upah/alat menunjukkan kecenderungan memiliki harga satuan yang lebih besar.

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